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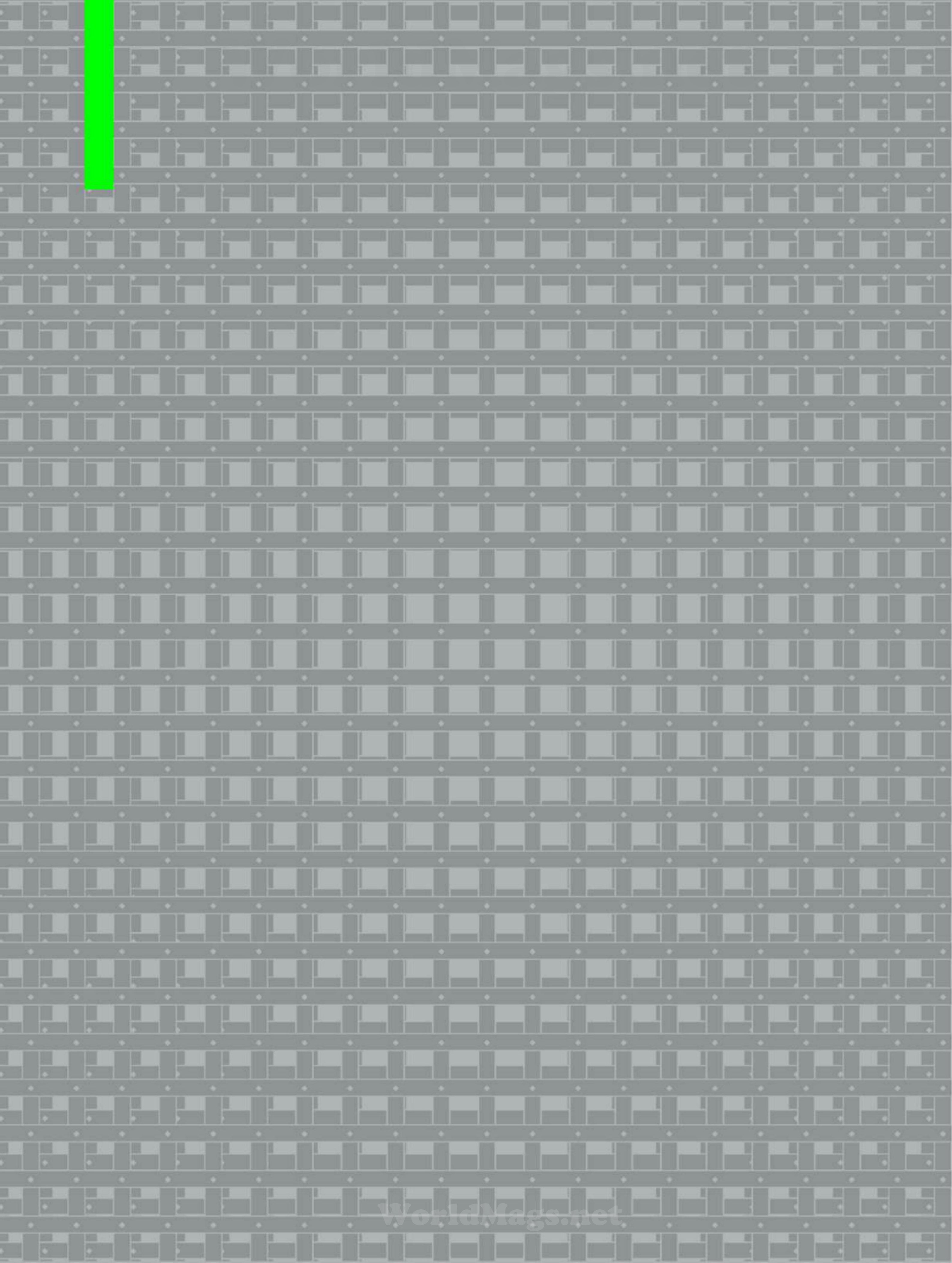
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GIANT KILLER

Bigger than Skyrim: The Witcher 3 sets the bar for next-generation action-RPGs

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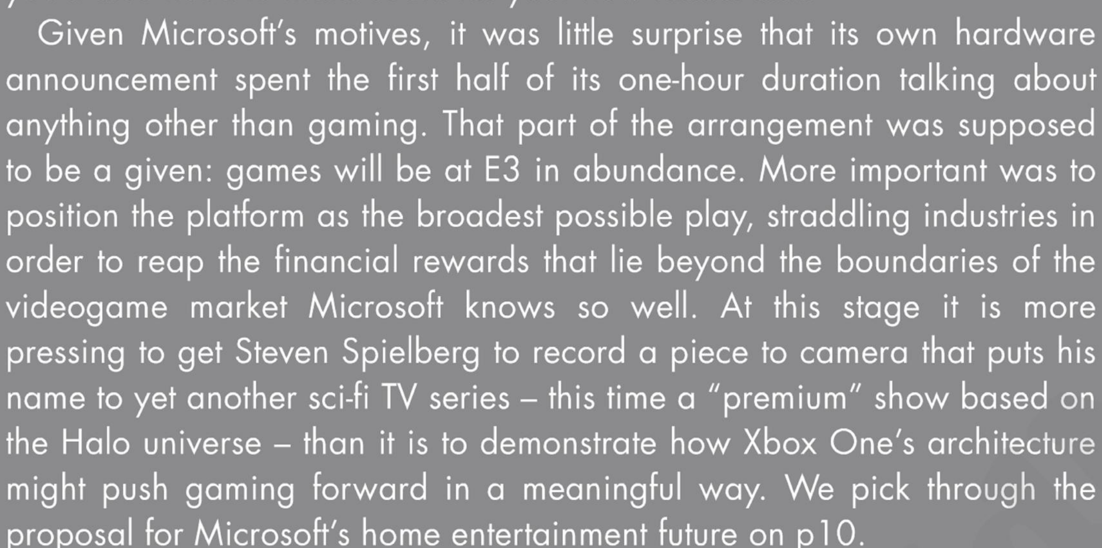
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JULY 2013



What happens when games simply aren't enough?



PS4's February unveiling was devoured as eagerly by execs at Microsoft as it was by the consumers Sony was trying to attract – and the team at Redmond liked what it saw. In committing to a platform focused foremost on games, Sony did what its fans asked of it, but in doing so it opened the door for its key competitor. Here was the opportunity for Microsoft to position itself as the company that will finally deliver the all-encompassing entertainment box we've been promised ever since game consoles developed multimedia aspirations in the early 1990s. TV shows, movies, Internet services, music, videogames: this new hardware will administer everything you need. Just one box: Xbox One. Or rather two boxes, if you want to pipe TV programming through the device. Oh, and of course you'll also need to make room for your new Kinect unit.



Given Microsoft's motives, it was little surprise that its own hardware announcement spent the first half of its one-hour duration talking about anything other than gaming. That part of the arrangement was supposed to be a given: games will be at E3 in abundance. More important was to position the platform as the broadest possible play, straddling industries in order to reap the financial rewards that lie beyond the boundaries of the videogame market Microsoft knows so well. At this stage it is more pressing to get Steven Spielberg to record a piece to camera that puts his name to yet another sci-fi TV series – this time a "premium" show based on the Halo universe – than it is to demonstrate how Xbox One's architecture might push gaming forward in a meaningful way. We pick through the proposal for Microsoft's home entertainment future on p10.

Fortunately, this issue's cover game happens to be lined up for release on Xbox One, alongside PS3 and PC, which gives us the opportunity to look in some detail at how next-generation games will shape up. Our report on *The Witcher 3: Wild Hunt* begins on p40.

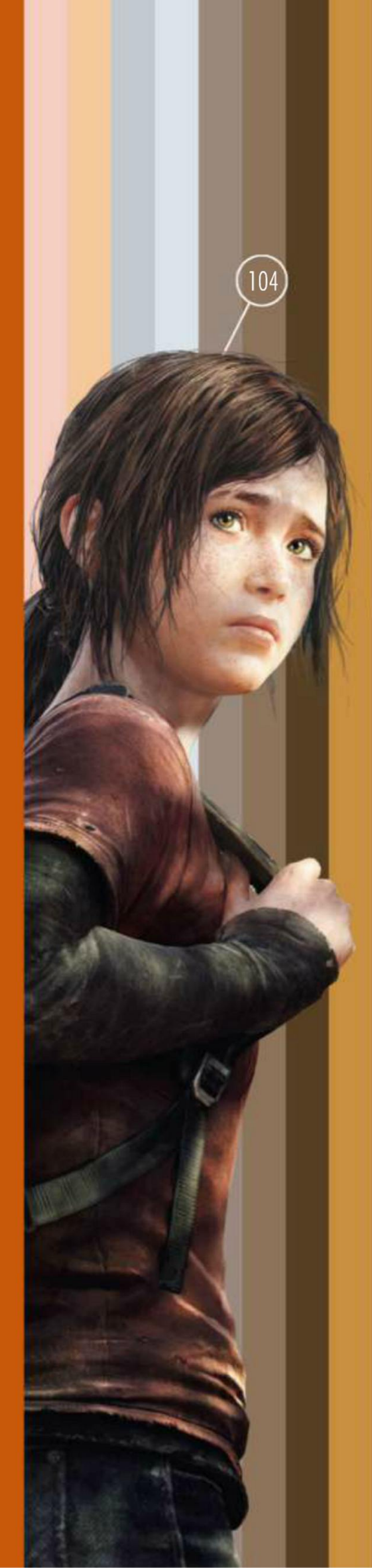


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WLEDGE

Microsoft erected an ominous black-and-white marquee on its Redmond, Washington, campus in order to introduce the world to Xbox One (1). Even if the venue looked well suited to a wedding from the outside, Microsoft failed to marry the disparate components of its vision into a convincing presentation. Is it a game console or a media box? Confusingly, it's neither, and it's both. Along with an in-depth breakdown of Microsoft's presentation on p10, we go hands-on with Xbox One's redesigned controller – as well as hands-off with the new Kinect unit – and take a look at the base hardware. We also talk to Microsoft Game Studios corporate vice president Phil Spencer about Microsoft's opportunities for innovation, that TV focus, and the games we can expect to be playing on Xbox One later this year. Then, on p18, we preview this year's Brighton-based Develop conference (2), which will focus on the challenges of next-generation hardware and how best to tackle them. We reveal the winners of the Get Into Games Challenge 2013 (3) on p20, and in Soundbytes (4) on p22 Greg Zeschuk explains why he prefers beer brewing to making games. Finally, in My Favourite Game on p24, X-Men, Fantastic Four and Iron Man writer Matt Fraction (5) illuminates what games can learn from comics, why bro culture is toxic, and how *Wing Commander II* nearly ended his education.



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One vision

Microsoft finally clarifies its next-gen plans, but is Xbox One really a game console?

At least we saw the hardware. Microsoft's first pitch for Xbox One may not have been aimed squarely at gamers, as Sony's PS4 reveal was, and its hour-long introduction to the next generation might have ended with more questions raised than answered, but there it was: the box Microsoft wants to own the space under every living-room TV.

According to **Don Mattrick**, president of Microsoft's Interactive Entertainment Business, Xbox One is the company's bid to "improve a living room that has become too fragmented, too complex, and too slow". It's an "all-in-one" box for games, TV and entertainment. Xbox One has the power and interface to finally make that vision a reality, but Microsoft's announcement, which took place in a specially erected tent on its Redmond campus, was aimed too squarely at one demographic. Credit where it's due: it takes chutzpah to summon the world's press to an event livestreamed to millions worldwide and speak almost exclusively to the American man of the house.

That tent was, appropriately enough, set up on Microsoft's on-site football pitch. On this evidence, Xbox One is a system for the US sports fan, the kind of guy who wants to see his fantasy league stats update in realtime when LeBron James sinks one from the corner, and a man who is prepared to exclaim "Xbox, show fantasy" out loud in an empty room to make it happen. It's for the guy who wants to use Xbox One's integrated Skype functionality to phone a fantasy-league rival and taunt them without taking his eye off the action. There is a "broad strategic partnership" with EA Sports, whose executive VP, Andrew Wilson, announced its new Ignite engine and new *FIFA*, *NBA*, *UFC* and *NFL* games. There's also an exclusive NFL deal that promises not only additional content for Xbox One and SmartGlass, but Microsoft's tech on the real-world sidelines, too.



Xbox One sports a custom eight-core CPU, 8GB of RAM, and a combination Blu-ray and DVD drive. The HDD, at 500GB, is the biggest Microsoft has ever put in a console, though it will need to be given a mandatory game-install policy

In fairness, sport was probably the best way of showcasing Xbox One's live TV capabilities, for which it takes control of any supported set-top box connected by HDMI. Senior VP Yusuf Mehdi took the stage and showed off Instant Switching, flicking back and forth between games, live TV, movies and music, and then summoning apps to the right side of the screen as well as overlays. He did it all with voice and gesture control, interacting with the improved Kinect sensor that will be bundled with every console and is essential for it to function. Its vocabulary is much improved, too, recognising TV channel names and even the titles of individual programmes. One of several new gestures Kinect recognises, grab, is like a full-body version of pinch-to-zoom on touchscreen devices: reach out to opposite corners of the screen, draw your hands together and you return to the Home menu, which is a further evolution of the Windows 8 design philosophy in 360's dashboard. Do the reverse and your chosen content fills the screen.

Since Kinect launched in 2010, there have been rumours that its specs were trimmed back late in the day to hit its target retail price; the device's second iteration is a step up in every regard. That camera captures at 1080p, has a wider field of vision, can 'see' in the dark and make out much finer movements than before. Kinect group program manager **Scott Evans** explains: "The fidelity is three times what we had in the first generation of Kinect. We can see fingers, wrinkles in your shirt, facial features. We can see grabbing gestures, your thumb and the tip of your hand. We read microfluctuations in your blood flow through your face to read your heart rate."

He's right, too: as we stand in front of Kinect 2 for the first time, it takes an accurate reading of our pulse. It knows when our mouth is open and closed,



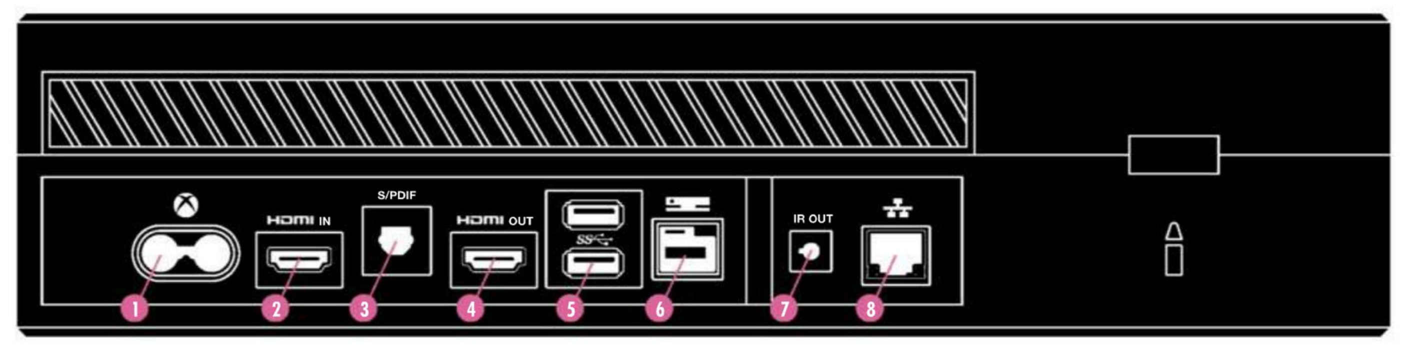
and picks up joint rotations as well. It currently treats four fingers as one joint and thumbs as another, but the resolution's high enough to track individual digits. The wider field of vision is perhaps the most vital addition, removing the need for an internal motor (and with it the first-gen Kinect's faintly creepy wake-up head nod) and making the device suitable for more than just the large of living room. "You can get closer to the sensor – it's designed to work in smaller living rooms – and farther away, up to about four-and-a-half metres," Evans tells us. "I'm six feet tall, and Kinect can see me completely from one metre away."



The Home menu's layout is an evolution of 360's current dashboard, with even more Windows 8 in its DNA. The Trending screen shows you what's popular among your friends list, and across Xbox Live as a whole

Kinect, chief product officer **Marc Whitten** said in the reveal, is "the binding power" between Xbox One's trio of input devices: Kinect, the second-screen SmartGlass tech, and the redesigned controller. The latter sports a dramatically improved D-pad, smaller deadzones on its analogue sticks, and rumble motors in the triggers that lend a tactility to firing a gun or applying a racecar's brakes. Xbox One looks not at the controller, but the player holding it: swap one pad with another player and Kinect detects the change, automatically switching the controller's assignment to suit. Batteries are now seated horizontally, shifting the controller's centre of gravity and making it feel a little lighter. We saw Microsoft's stress-testing lab, where dozens of controllers were hooked up to button-pressing and stick-waggling machines, as well as a robot arm that throws the controller around. It's been testing prototypes for six months, and every button is pressed three million times; Microsoft's own guidelines say it should survive two million.

These finer details of Microsoft's work on Kinect and pad would have done much to help sell the console to the engaged 360 audience who surely made up the majority of those tuning in to the livestream. Following Sony's pitch to gamers and developers, we expected Microsoft to focus on what it does best – networked services and software – but





Xbox One's broad-ranging functionality means that it has an array of ports, namely:
1 Power supply.
2 HDMI in.
3 Optical audio out.
4 HDMI out.
5 2 x USB3.0 (a third port exists on the side).
6 Kinect port.
7 IR out.
8 Ethernet.
Meanwhile, the console's redesigned controller has an integrated battery compartment, and thus loses the recognisable bulge on the back. More interesting for players is the addition of 'dynamic impulse triggers', which provide haptic feedback and are far more sensitive than the triggers of the previous design. Elsewhere the controller sports:
9 Smaller thumbsticks with a textured edge.
10 The Back and Forward buttons have been replaced with View and Menu.
11 A reworked, high-precision D-pad.
Finally, the new Kinect unit is so integral to the Xbox One experience that the console will not operate without it plugged in. The new IR camera 12 is capable of 1080p capture, and the hardware is capable of seeing users in the dark.

technical details were few and far between. Whitten revealed the console's five billion transistors for the processor, eight cores and 8GB of RAM (later confirmed as DDR3), and its native 64bit architecture. He spoke of Xbox One's three operating systems: an Xbox OS for games, the Windows kernel for apps, and a third for multitasking. Then it was back to sports, to TV, and to a live-action Halo TV series that's being produced by Steven Spielberg.

There were games, but not enough of them. *Forza 5* was shown running on Xbox One and looked remarkable, but was shot from TV-style camera angles that invited suspicion about just how realtime it all was. There was *Quantum Break* from *Alan Wake* developer Remedy Entertainment, which we're told "blurs the line between gameplay and television", but whose debut trailer gave little away. EA's Ignite engine showed off highly detailed 3D crowds and stadiums, as well as a dramatically improved animation system, illustrated to great effect by footage of a virtual Andrés Iniesta dipping a shoulder and turning away from a defender. Ignite, it seems, is designed to allow for the rapid shifts of balance and direction that separate great players from good but which videogames have never before come close to simulating. It looked striking, but EA's Wilson would later admit the whole thing was prerendered, and whatever the finished article looks like, it'll all be on PS4 as well. So will *Call Of Duty: Ghosts* (see p64), shown off at the show's climax by Activision Publishing CEO Eric Hirshberg. Expect a new engine, Kinect voice control, character customisation and dynamic maps in multiplayer, plus a meticulously motion-captured dog.

Then the lights and the livestream went down, and it all began to unravel. Given the leaks concerning the darker sides of Xbox One's functionality – chiefly its always-on DRM and supposed block on used games – Microsoft was woefully unprepared for the awkward questions that followed. It had three months after Sony's show to get its messaging right, but it wasn't enough. Unusually, there

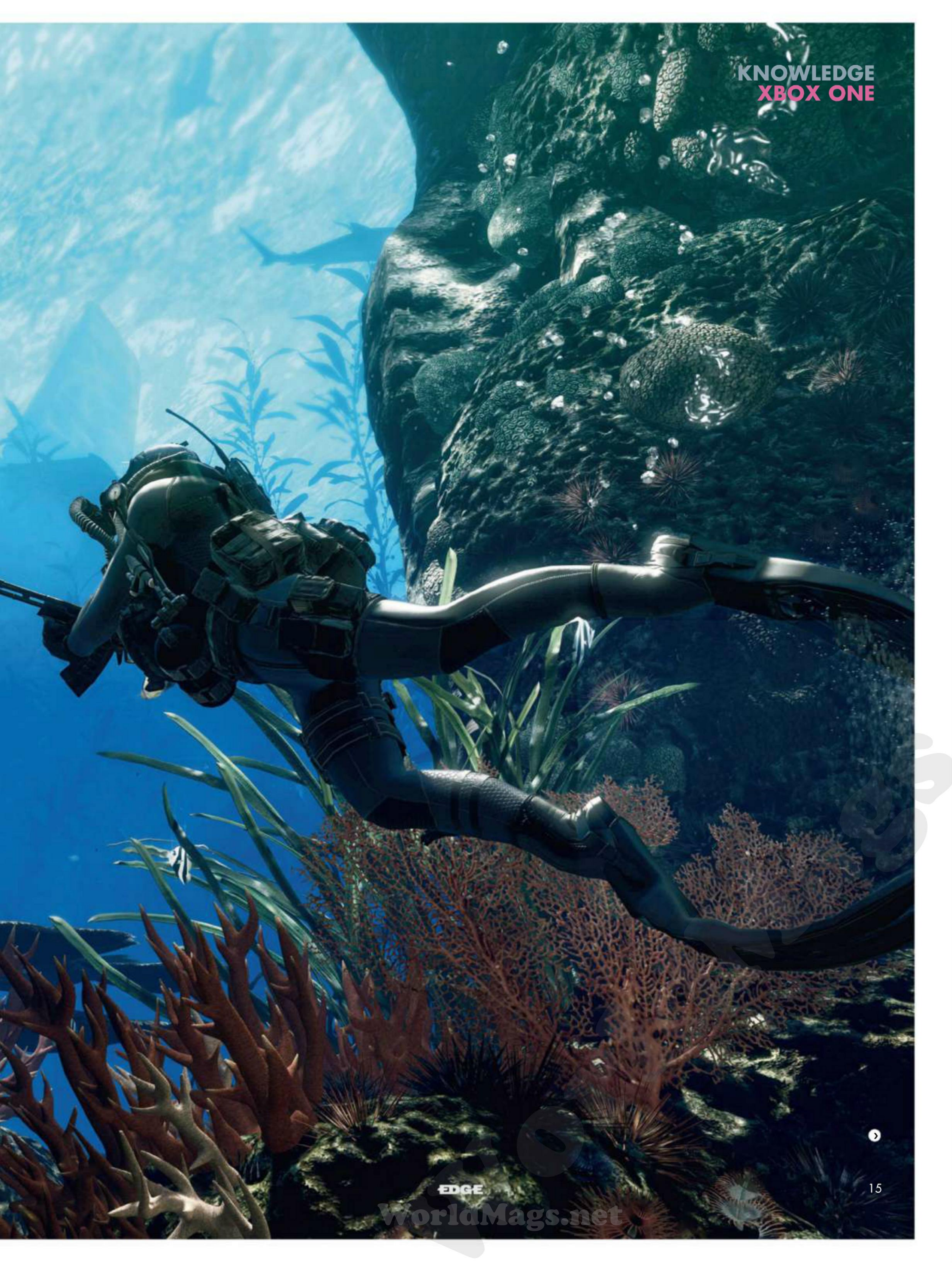




Don Mattrick (top) is the president of Microsoft's Interactive Entertainment Business; Marc Whitten is the chief product officer of Xbox One



Call Of Duty: Ghosts heralds the arrival of the next-gen *COD* engine, and Infinity Ward is clearly excited about the possibilities new hardware brings. Fish reacting to your presence by swimming away is certainly an FPS first



Remedy's *Quantum Break* was the evening's sole gaming surprise. As the name implies, time is a central theme, and we suspect Phil Spencer's intro referenced *Max Payne*'s invention of bullet time with good reason

was no well-rehearsed company line with which to bat away unwanted questions.

Xbox One is always connected, except when it isn't, and that's fine, but only for a while. An FAQ on the Xbox website is as confused that sounds: "No, it does not have to be always connected, but Xbox One does require a connection to the Internet." If your connection drops, you'll still be able to play games, **Phil Harrison** told Kotaku, but only for a set time. How long? "I believe it's 24 hours." Soon after came an official Microsoft statement: "There have been reports of a specific time period – those were discussions of potential scenarios, but we have not confirmed any details today, nor will we be." (On the facing page, Phil Spencer is a little more on-message.)

Harrison was at it again when faced with the used-games question. All Xbox One games have to be installed to the system's non-upgradeable 500GB hard drive and are registered to an Xbox Live account, but other users with accounts on the same console will be able to play the game unhindered; take a disc to a friend's house and you can play it on their system, but only if you sign into your own account. If they want to install it and play using their own Xbox Live Gamertag, Harrison said, they'll have to pay up – "and not just some sort of activation fee, but the actual price of the game". Little wonder EA axed its $10 Online Pass days before the show. Again the damage-limitation machine kicked into gear, first with a flat-out denial from the Xbox Support Twitter account, then from Xbox Live mouthpiece **Larry 'Major Nelson' Hryb**: "While there have been many potential scenarios discussed, today we have only confirmed that we designed Xbox One to enable our customers to trade in and resell games at retail."

More bad news would follow. Indies won't be able to self-publish their games. The fancy TV integration that formed the bulk of Microsoft's pitch to the world will only be available at launch in the US. Only those with newer set-top boxes will be able to control them using Xbox One over HDMI; the majority will be forced to sit an infrared blaster in front of their cable box. An unnamed hardware designer admitted in a video interview that Microsoft "purposefully did not target the highest end graphics". A straight admission that your direct rival has built the more powerful system? Perhaps this is telling: is PS4 really Xbox One's direct competitor? Xbox One's featureset isn't that of a games console. It's a media hub, a web browser, a movie and music player that also plays games. It's an iPad for the TV screen. It seems Xbox One is designed to beat Apple and Google in taking control of the living room.

It's an ambitious vision, but with it comes so much anti-consumer thinking that it's not one we're keen on being part of. Not yet anyway. Microsoft's confused message will surely be the source of much internal consternation, but there will be relief that E3 is just around the corner. There, we're told, we'll learn more about its 15 exclusive games, eight of which are new IP. There are more Xbox games in development now than at any time in Microsoft's history, and that's just as well. If the company is to win back the hearts of the people that made the Xbox brand a success, it's going to need them. ■

Q&A
Phil Spencer
Corporate vice president, Microsoft Studios

Is Xbox One going to be backwards compatible?
No. When we designed the new platform, a lot of the features we were looking at meant we had to make a fundamental trade-off. People can keep their 360, and obviously the content will continue to work, but we really wanted to take a forward-looking position with Xbox One – something designed for the next ten years – and that required backwards compatibility be one of those things we had to put off the list. Are we worried about it? No, I think the ecosystem on 360 will remain strong. In fact, there's a big announcement about 360 we're going to have at E3 that I'm excited about.

What's your position on used games? Trade-ins drive sales of new games, after all.
I think the whole idea of a secondary market is important and it'll be important in the next generation, and we've designed with that in mind from the beginning. We think there are a lot of advantages of having your content assigned to you digitally – we did that on 360 with cloud-saved games – and we want to do that with content. We understand there are implications… just know that we recognise the importance of that market and we've designed with it in mind from the beginning. We'll share more details as we get further along the road.

Are you setting console-wide standards for performance, such as resolution and framerate?
No. There were games that shipped on 360 that were less than 720p. It's important we give creators the best tools to create the best experience possible and I don't think that platformer holders can dictate what the internal frame buffer size should be. *Forza 5* runs at 60 frames per second, but other people will make different trade-offs. I think it's important – maybe because I'm a studio guy – that you give freedom to the creator because today, through lighting techniques and post effects, resolution is not the thing that maximises beauty. Some of the most beautiful games [of] this generation are not dictated by how many pixels they're pushing to the screen. Motion blur, antialiasing, lighting: all of these things come into play. We just give [developers] the tools and let them make the right creative decisions.

There's Windows DNA in the operating system. Does that make Windows 8 apps easily portable to Xbox One?
That's a great line of thinking and very much in line with our own thinking on the subject. When you think about launch and how the system will grow over time, that's something that will evolve. When Yusuf [Mehdi] is up onstage and he's showing Internet Explorer Snap or Skype Snap, the ease of development for those teams – that they're not building a new native version of each of those apps for the TV – is important and it's what consumers want. [In terms of] how that ecosystem works, we'll share more data as we go towards launch and beyond.

A lot of the announcement focused heavily on the US market – especially the TV features. Can you roll this out to international markets?
It's one of the reasons we brought Phil Harrison on. We understood the partnership with the NFL was important, and there are a few fans over there in London, but international expansion and partnerships are important. We have partnerships with Sky, with Canal+ in France, and we'll continue to grow our international expansion. We'll put a worldwide face on the platform, because Europe in particular is especially important to us this generation.

"We'll put a worldwide face on the platform, because Europe in particular is important to us"

Can you really make a box that's compatible with all TV networks in all regions? What challenges does that present?
We've been in the media room business for years with back-end operations code for companies like AT&T and set-top boxes. It's not trivial in any way and it's our investment over the years that makes it possible for us to stand up and say we want the world to watch television through this box and all the implications of that. In some markets, you're dealing with digital broadcasts, there are solutions like Lovefilm, Netflix, streaming content… We're confident we can deliver a worldwide television solution, but the implications of that are non-trivial, definitely.

The announcement of *Quantum Break* was rather light on detail – it felt like half a reveal. What can you tell us about it?
It's not [for] launch. It's just one of those things [where] I see a team at Remedy and I love seeing them trying to break the normal constraints of how games and storytelling can interweave. I want them to try new things, so I put it onstage, not because I thought I could give you the beginning, middle and end of what this game would be like to play, but just to show our excitement around that partnership and how those creators are trying to push the boundaries. I guess I should apologise, but I'm never going to apologise for something Remedy does because I'm a big fan of theirs. But I understand why you'd call it a half-announce.

Is a console launch the best time at which to introduce new IP?
One of the things I'm really proud of right now as someone working in gaming is the number of devices people are gaming on, which means that new IP is going up in all kinds of places. I think you can do things mid-generation, but absolutely, when you think about *Halo* at the launch of the Xbox, *Gears Of War* around 360's launch, [this is] a unique chance to launch franchises that will define a generation.

How would you describe Microsoft's current relationship with independent developers?
As a publishing organisation, I think Microsoft has a strong relationship with developers. Not every developer is going to be happy with how things work out… We continue to foster relationships with developers of all sizes. We don't go out and PR the dollar amount of what we invest. There will be great games on other platforms – I think *Journey* was a great game – but I'm also proud of the work we've been able to do.

Do you think it's essential for a major company to show hardware when announcing a new console?
[Laughs] I'm just saying I thought it was an important part of our [announcement]. To announce the name, to announce it's coming out this year, and to show the hardware – I think those are all important things. We had to get it done in 60 minutes. And we felt we could do that knowing three weeks later we've got 90 minutes onstage to showcase games. I wanted to stand up and say, "15 exclusive games in development for Xbox One over the next year, eight of which are brand-new franchises", because I know, as a gamer, I want new stories, new characters. What are the great new franchises that will define the new generation?

How reliable will the hardware be? You did, after all, receive rather a lot of previous Xbox models returned in the post.
No! The previous Xbox was Trinity [the updated unit also known as Slim] and our success rate on Trinity was very high. We learned a ton from the 360 launch and we took care of our customers with the extended warranty, but I think Trinity is telling. Xbox One is built by the same Trinity team with the same learning that went from 360 into Trinity, and I'm confident in the quality of the new box.

The overwhelming focus was on the system's wider featureset. To what extent is the concept of a 'game console' over for Microsoft now?
I look at all the creativity that's happening on other screens and ask, 'Why isn't that creativity happening on the television?' Why don't we see free-to-play games taking off on television? Why aren't bite-sized games, games like *Wordament*, turn-based social puzzle games, working on the television screen right now? How do we make that screen as vibrant as those other screens as a development platform? Because we have the advantage of 5.1 sound systems, 60-inch plasma screens, total immersion, and yet we miss out on so many other game experiences that happen. We will show at E3 that we're going to be able to blow away a 60-inch 1080p screen in all its glory, but we're also going to introduce these other forms of gaming, along with TV and music and everything else. I want the console to be as relevant as any other device you have, and I think Xbox One is going to put us in a position where every kind of game can show up.

Meeting next-gen expectations

Brighton-based conference **Develop** prepares to tackle issues presented by a new wave of console technology

With the countdown to the next generation of consoles well under way, developers may find themselves scrambling for solutions to the new challenges facing the industry. These will be the focus of much discussion at July's Develop conference – the UK's answer to GDC, which will again be held in Brighton – with a series of panels and presentations based on next-generation development and changing retail models.

With all the additional CPU cycles available in next-gen consoles, AI could be the first of the next generation's revolutions, reckons Spry Fox programmer **Andrew Fray**. "It's promised every generation," he says. "Everyone knows about the PS2's Emotion Engine, but it's not as easy as that. More power doesn't automatically mean better AI, because our techniques don't scale in a linear manner and some of the biggest challenges AI programmers face are political. The graphics guys get a massive chunk of the new resources, and [so] designers and producers of big console games will need to want to see better AI and devote the resources to it, but right now everyone's hung up on more directed experiences. The money men see *Call Of Duty* being so successful with a very non-interactive, non-responsive AI.

"We can do it," he believes. "One of the most interesting things about PS4 isn't the faster processor, it's the 8GB of memory, which could let us have many more units making smart decisions onscreen. But players and developers aren't demanding better AI, and that's part of the problem. That's the challenge."

> "Developers aren't demanding better AI, and that's part of the problem. That's the challenge"

Fray will discuss the subject alongside other veteran AI developers at The Future Of Games AI panel, and ask if extra power will help us meet AI expectations.

Meanwhile, Ubisoft Reflections' Dr Chris Jenner and Simon O'Connor will take on another programming-centric challenge in their talk about porting games in a period of hardware transition. Their presentation is dedicated to the complexities of turning a current-gen game into a next-gen one, and the possibilities offered by extra power and more flexible hardware. Ubisoft's *Watch Dogs* will, for instance, be sharper and smoother on next-generation machines, but it will also feature a denser city that's populated by more vehicles, physics objects and NPCs, and it's just one of many games going through the same process at a number of studios.

Games aren't all next-generation consoles will offer, as Microsoft Lift's studio head Lee Schuneman will discuss in his keynote speech on connected entertainment entitled Beyond The Box. The Rare veteran heads up a studio dedicated to cloud-based entertainment, delivering the Xbox service beyond the console itself in ways he can only discuss in a post-E3 setting. Lift is unlike any other Microsoft studio in that it's partnering with independent developers to incubate and develop cloud-based entertainment, rather than develop all its own projects in-house, and complements Microsoft's other London studio – Soho Productions – which is dedicated to TV entertainment and has partnered with Sesame Street's producers and National Geographic.





Spry Fox programmer Andrew Fray (top) and Ollie Purkiss, who's a designer at Supermassive Games

GETTING CASH BACK

At a time when even the largest publishers are struggling to turn a profit, the question of how British developers can stay solvent and successful will be a major topic at Develop 2013. Alongside Ollie Purkiss's talk on making F2P games, Kostas Zarifis will discuss his move from Lionhead into indie development and his work on *Kung-Fu Superstar*, and John Holland from iOS developer Big Fish will ask where the real money is to be found in game development. Also, Elaine Reynolds from Simteractive tackles the indie developer's dilemma: where do you draw the line between games as art and games as a business?

Later in the conference, Supermassive Games' designer **Ollie Purkiss** will discuss the studio's tricky transition to free-to-play development, running games as a service, and just how exactly to build a free-to-play game that's successful for the studio and for players.

"The biggest surprise for me was how little time you have to capture a player's attention with free-to-play," he says. "When someone chooses to play a console game, they're already invested in it – emotionally and financially – and so they will wait if it takes a little time to load or the first hour of the game is a little slow. With a free game, though, they have no investment at all, and you literally have seconds to draw them in or they will leave and never return. To make matters worse, this timer starts from when they first decide to give your game a go and so includes any download and setup time as well as the beginning of the game.

"Bad free-to-play implementation can have one of two contrasting effects on an otherwise good game. Firstly, the game could fail to pay for itself, and have to be shut down before it has reached its potential. The second effect is that the game simply stops being a good game, because heavy-handed monetisation attempts extract all the enjoyment from an otherwise fun experience. Getting the balance between these two extremes right is difficult to do, but do it right and you can end up with a well-loved game that allows its players to invest an amount of time or money they are comfortable with, and receive a rewarding and fun experience in return."

Develop runs July 9–11, and we'll be reporting from the conference at www.edge-online.com. ■



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Challenge complete

After two months of frenzied coding, it's time to reveal the winners of the Get Into Games Challenge 2013

The second annual Get Into Games Challenge was launched March 4, and two months of frantic development have seen creators working on an eclectic selection of puzzlers, endless runners and gun-less shooters, all based around the theme of 'Do no harm'.

The entries were judged by The Astronauts founder **Adrian Chmielarz**, DICE general manager **Karl Magnus Troedsson**, Unity CEO David Helgason, **Edge** editor-in-chief Tony Mott and news editor Michael Gapper, and were scored on originality, technical merit and creative interpretation of the theme.

After whittling the 70 entries down to a shortlist of ten, and that list down to a final three, the judges agreed *SharpShapeLovers* (www.bit.ly/10kwCpJ) was the competition's winner. Created by German developers Thomas Krüger and Fabian Schaub, *SharpShapeLovers* bends to their limits the challenge's do no harm premise and the rules of block-dropping puzzlers for a game based around stacking angular shapes while never allowing their pointed corners to meet. It charmed the jury with its accessibility, its clear presentation and its demand for both reflexes and lateral thinking.

"It's an interesting game mechanic that forces me to think ahead while still having a second-to-second skill element," says Troedsson. "Watch out, *Tetris*."

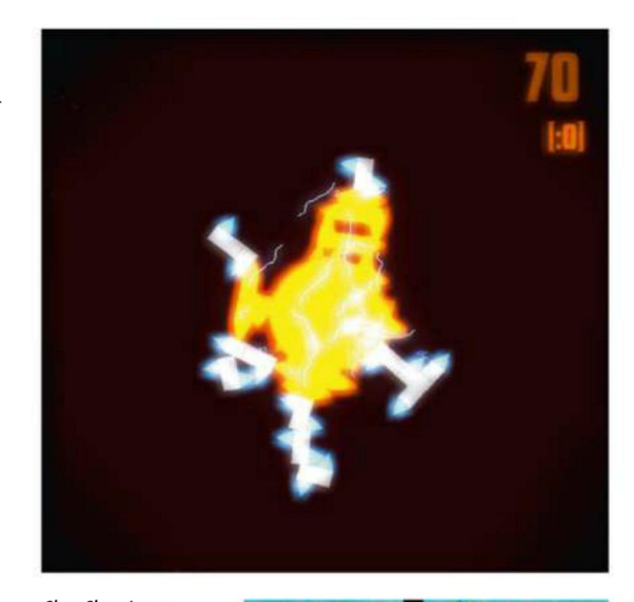
"It forces me to think ahead while still having a second-to-second skill element. Watch out, Tetris"

Arriving in second place is *Let There Be Life* (www.bit.ly/10TeAY4) by the husband-and-wife team of Backward Pies. Programmed by Jason Seip, *Let There Be Life* tasks players with growing a tree without preventing sunlight reaching the flowers beneath it. Our panellists were hugely enthusiastic about the game's atmosphere but asked for more strategy.

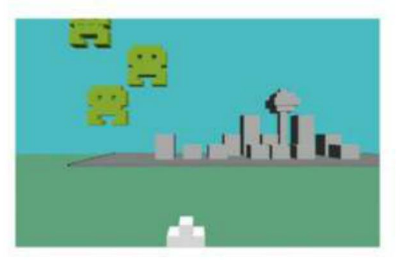
"The gameplay mechanics are fuzzy," says Chmielarz, "but I love the general idea and the vibe of the game." Troedsson agrees: "It's an interesting take on a creator game, and even if the strategic thinking seems a little thin, this is outweighed by the relaxing, almost sedative experience."

Finally, in third place is student programmer Stefen Rodger's *Personal Space Invaders*, which subverts the classic game's rules by insisting every shot narrowly miss its target. "Sometimes it's the simplest things that shine," Chmielarz says. "It's so deceivingly simple: fire at where your [enemies] aren't. I loved the game's fun little twist and its insane replayability. But, oddly enough, it got me thinking about the dangers of friendly fire in real life."

Personal Space Invaders and *Let There Be Life* win a Unity Pro licence, while *SharpShapeLovers* wins a Pro licence and a trip to Unity's annual developer conference, held in August.







SharpShapeLovers **(above) is a puzzler in which you stack shapes but must not let sharp points connect. Runners-up *Let There Be Life* (right) and *Personal Space Invaders* (below right) win their developers Unity Pro licences**



www.bit.ly/VxbEU1
More details on this year's GIG Challenge





















3
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Soundbytes

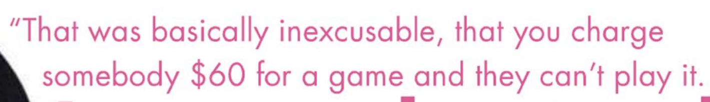
Game commentary in snack-sized mouthfuls

"The industry is so systematic. Game schools raise students to fit these systems. I'd like young people to break out of their shells. Raising average students to fill seats will make the industry boring."

Keiji Inafune, Comcept's CEO, explains why the world needs his Inafune Academy.

"[*Homefront*] didn't lose money. That game sold three million units. It wasn't a financial disaster. Was it disappointing? Oh yes, it was very disappointing..."

Former THQ chief **Danny Bilson** won't hear a word against *Homefront*. Sort of.



"That was basically inexcusable, that you charge somebody $60 for a game and they can't play it. **I can understand the outrage.** If I was a consumer buying the game and that happened, I'd feel the same."

Sim City creator **Will Wright** feels your pain when it comes to the series' latest iteration.

"I'm actually happy with the world of beer because those people don't talk like that."

Ex-Bioware boss and beer buff **Greg Zeschuk** on his life away from gamer scrutiny.

ARCADE WATCH

Keeping an eye on the coin-op gaming scene



Game Dance Dance Revolution
Manufacturer Konami

The 14th *Dance Dance Revolution* drops the subtitles, the numbers and the double and triple Xs for a return to the core name and its last-ever dedicated *Dance Dance Revolution* cabinet. It will also have a massive tracklist that features almost every tune from the game's 15-year history.

For a moment in the early 2000s, you couldn't enter a western arcade without hearing the pattering of feet on steel. In Australia and Europe – where the game was inexplicably renamed *Dancing Stage* – the machines commanded swathes of floor space and drew as many spectators as they did players. *Dance Dance Revolution* popularised performance games, and for a brief moment made arcades cool again. Flimsy dance mats accompanied the home releases and the most dedicated players bought high-end arcade-quality platforms, but perhaps thanks to its familiarity as a home game, its popularity soon waned in western arcades.

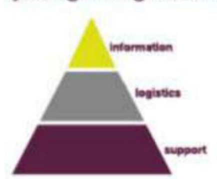
That drop-off never happened in Japan, where many homes are too small for such physical gaming and arcades are still a place where performances occur. The game's annual update remains an event in Akihabara, and this final version at last turns *Dance Dance Revolution* into a platform all of its own. It's regularly updated by Konami via its own e-Amusement system, and it also lets the developer take a cut of the on-floor profits.



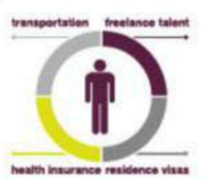
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Sources: Arab Media Outlook, 2010. Media on the Move 2009, A.T. Kearney. Introduction to Gaming, Michael Moore. Screen Digest IDC. Arab Advisors Group, 2010. Global Entertainment and Media Outlook 2011. PricewaterhouseCoopers 2012.

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My favourite game Matt Fraction

The X-Men, Iron Man and Thor writer on Skyrim, the perils of bro culture, and conducting planning meetings over Xbox Live

Comic books and console games target a similar audience: 18- to 30-year-old males with money and time to invest in a hobby that encourages obsession. Writer **Matt Fraction** has handled some of comics' most famous characters, and sees many parallels between games and his medium. We talk to him about the old days, game writing, and a scaled-up *Space Giraffe*.

How far back does your history with gaming go?
I remember playing the [Atari] 2600 a lot… I was on a fine arts track before I started writing, and realised at 15 or 16 – after almost falling out of school playing *Wing Commander II* – that I had to play fewer games. Like the scene in Boogie Nights where Dirk Diggler is watching Alfred Molina walk around half-naked and the Chinese kid is throwing firecrackers everywhere? I thought, 'I have to get out of this. I'm in a bad place.'

Do games fit into your schedule now?
I make these futile gestures of buying games, but I don't want the game as much as I want the time it represents to play it. I have a sealed *BioShock Infinite* sitting three feet away. I played *XCOM* for all of 20 minutes one night; that was exciting. I bought two of the Bond games in the lead up to Skyfall, and have not played either. *Skyrim* was the last game I really played with any commitment or time, and it's not really a game as much as it's a lifestyle decision. I'm an alcoholic and drug addict in recovery, so I never grow out of it, so with *Skyrim* I had to convince myself it was research.

MISSION TO MARVEL
After his successful independent comic books Casanova and The Five Fists of Science, Fraction left his job as creative director at MK12 to become a full-time comic writer with Marvel. He has since handled almost all of Marvel's most famous characters, won an Eisner award for his work on The Invincible Iron Man, and served as an advisor on the Iron Man movie series. He now works on two Fantastic Four-based series with artists Mike Allred and Mark Bagley, as well as New York Times bestseller Hawkeye with artist David Aja.



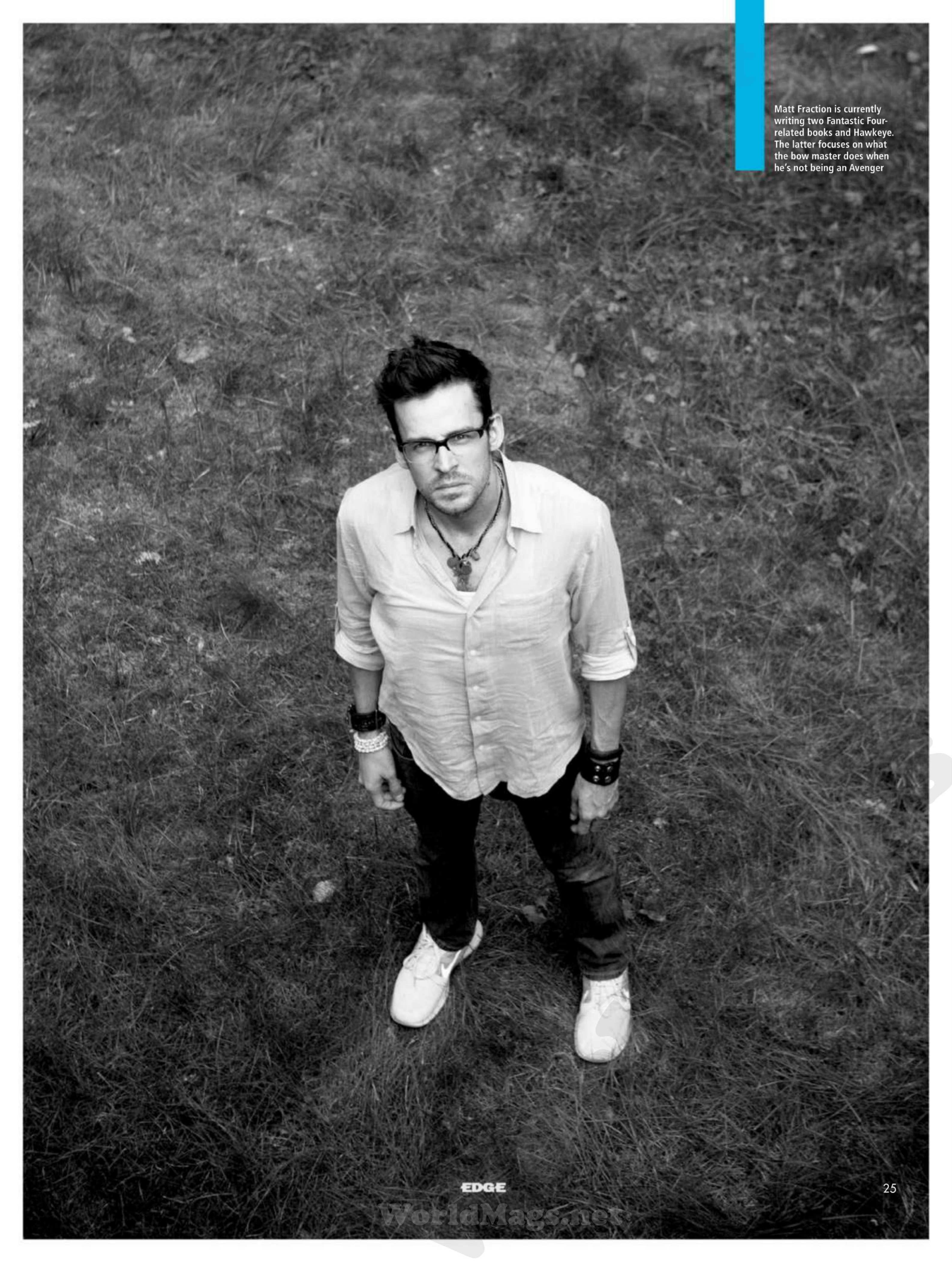
You worked on the Iron Man and Thor games as a writer. Can games learn much from comics, and vice versa?
In my experience, the writer is held with slightly more contempt than they are in Hollywood. The two games I wrote, it wasn't what I would call writing. I worked with great people, but they were like, "Hey, we've already built these models, so your story has to happen here and this guy has to be in it." It was storytelling by algebra. Games can learn story from comics, and comics can certainly learn accessibility, drama, visuals from games. I think you could really do something with a game if you brought in a writer at the start and spent a week in a room working things out.

Does game content frustrate you?
Comics and Hollywood are obsessed with 18- to 30-year-old males, and so are games, because that's where the disposable income is, and commerce always trumps art. As long as there's so much money to be made in games, nobody is going to stop and wonder, 'What would *Space Giraffe* look like on the scale of *Skyrim*?' There's no incentive to try to figure out how to make *Skyrim* or *BioShock* appeal to women as much as boys, [or] to make it an inclusive narrative. It's like, "Hey, bros, come shoot bitches and be a bro."

That's quite an accurate picture of the attitudes in some online console games.
I was talking to a buddy of mine who has literally never got online. And he was like, "I need to do that one of these days…" and I was like, "What? You need a 15-year-old to call you the N word? No, you don't. You don't need a bunch of racist McLovins screaming at you." I had a small group of girls and guys that I played with, and that was nice; that's the best way to play online. [Ed] Brubaker and I did a healthy chunk of our Iron Fist planning over Xbox Live playing [Rockstar's] *Table Tennis* and *Halo*. It's like having a business meeting in a bouncy house. I think there's something that comes from shearing the alpha level of brainwaves right off to get right to your subconscious.

> "[Ed] Brubaker and I did a healthy chunk of our Iron Fist planning over Xbox Live playing Table Tennis"

OK, it's time: what's your favourite game?
In recent memory: *Skyrim*. It was the closest thing to what I really think games can be. I certainly have issues with it, but it felt like taking a break from whatever it was I was doing. But there was a game back in the '90s called *Gadget: Invention, Travel & Adventure* – it's been ported to the iPad [as *iGadget HD*]. It's like a Japanese art deco sci-fi game where you start in a hotel, you have no idea what the game is, you have to turn the radio on and pick up a key, and you follow this weird mystery. That game still informs the way I work – the richness of that world and that mystery. I had no idea what that game was. You just show up and it starts. It was really evocative; you had to learn what the game is by playing it… I still have it, and I still play it 20 years later. ■



Matt Fraction is currently writing two Fantastic Four-related books and Hawkeye. The latter focuses on what the bow master does when he's not being an Avenger

WEBSITE
RiftEnabled
www.riftenabled.com

When Oculus Rift appeared on the cover of **E**254, just a handful of titles supported the VR goggles – *Team Fortress 2*, *Hawken*, *Doom 3* and a few homemade projects brewing among the modding and indie communities. Just one month later, a dedicated wiki has emerged simply to keep track of the number of Rift-compatible games, which span from retrofitted titles such as *Assassin's Creed* and *Arkham City* to official VR patches for *Half-Life 2* and *Project Cars*. At the time we go to press, the site lists some 150 games. A few you'll likely never play outside of a university lab, others you'll own already, but all of them demonstrate the enthusiasm with which the handful of developers with Rift units – those toiling from home as well as those with millions of dollars behind them – have embraced VR.



VIDEO
Disunion
www.vimeo.com/65510054

More often than not, games are about experiencing the improbable: things that could never happen, things you wish would happen, or in *Disunion*'s case, things you hope will never happen to you. *Disunion* lets you live your own death by guillotine from the inside of an Oculus Rift's VR headset. And while it's possible to download and play it right now, the video shows the dev team's own 'enhanced' version of the experience, with the players' hands behind their backs, and a surprise hand chop at the moment the blade drops.

WEB GAME
Candy Box
candies.aniwey.net

There is nothing about *Candy Box* that isn't ridiculous, but that's the point. Aniwey's ASCII game sits in a browser window, candies accumulating slowly. You could eat them, or you could wait a while until a merchant arrives and trade candies for weapons, which unlocks a quest line and a lollipop farm, then upgraded swords, then potions and magic scrolls, and on and on it goes. But the thrill of discovery is real – *Candy Box* starts with nothing but a counter, but quickly grows to fill your window with characters and items and locations. You learn by doing, blowing thousands of candies on failed experiments and waiting entire mornings to accumulate enough to try again, which is testament to the human brain's love of seeing numbers go up and monsters fall down.

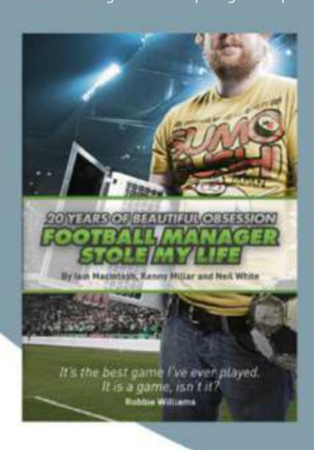


THIS MONTH ON EDGE

The clutter of baubles that caught our attention during the production of **E**255

BOOK
Football Manager Stole My Life: 20 Years Of Beautiful Obsession

Any *Football Manager* player will tell you they could write a book about it, such is the way its sliders and stats blossom into a game capable of spanning the emotional spectrum. And now a book *has* been written about it, one shot through with an undercurrent of regret – of broken marriages and broken sleep. Its story is an incredible one, touching on the depths of obsession. Even an amusing chapter in which failed *Football Manager* superstars are celebrated has the sense of ex-drug addicts comparing bad trips.



continue

Xbox One
It's simple: how else can we play the next *Halo*?

Sonic & Nintendo
Who'd have thought it? 1993's mad rumours finally came true

Hawken's odd equal rights
A pin-up is lampooned with a buff bro counter

The summer drought is over
A 10, three 9s and an 8? That'll do nicely

quit

Xbox One
How to shorten? XO? XBO? X1? XOne? Mmm

Sonic & Nintendo
Er, who is this deal meant to be salvation for exactly?

EA's Online Pass
Let's bid it farewell. And say hello to next-generation DRM

The summer drought is over
Well, till that awkward E3 window anyway

TWEETS

I spend a shocking amount of time in Excel. Doing math. 15 year old me is horrified.
Jason Bergman @loonyboi
Senior producer at Bethesda

It's not AAA that's dead. It's the $60 price tag that's dead.
Adrian Chmielarz @adrianchm
Co-founder, The Astronauts

The greatest tool for narrative is the world you create for it to exist in. A well designed world could tell its story in silence.
Hidetaka Miyazaki @HidetakaMiyazak
Game director, From Software

Dear internet trolls: you say such mean things to me, just as I'm learning to love again.
Ken Levine @IGLevine
Creative director, Irrational Games

Modern Warfare's sniper sequence was nice way back when. I never want to see it in another game ever.
Shawn Elliott @ShawnElliott
Level designer, Irrational Games



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DISPATCHES
JULY

Within Dispatches this issue, Dialogue sees **Edge** readers express disappointment at the Xbox One reveal's TV focus, tackle the definition of 'game' for themselves, and ask if what we really want from the future is more moments like the past. In Perspective, **Steven Poole** explains why a little more reality, or at least fictional coherence, helps us suspend disbelief; **Leigh Alexander** gives her charter for the future of game journalism; and **Brian Howe** doesn't let a childless lifestyle stop him branching out into the field of tech-savvy parenting advice.



www.edge-online.com
Discuss gaming topics with fellow **Edge** readers



Issue 254

Dialogue

Send your views to edge@futurenet.com, using 'Dialogue' as the subject. Letter of the month wins a PS Vita

One for all, none for One?

It seems to me that Microsoft and Sony have managed to all but switch positions in their respective attempts to court favour. Xbox may have been a face for cloud computing, but it was bursting with personality and all about games and those who love to play them. PlayStation, meanwhile, was arctic-cool but vapid, pretentiously trying to appeal to fashionistas by pretending to not to care. A hub as fitting for movies and music as it was for games.

But as both lineages have progressed, they've each softened their focus in different ways. PS4 is set to champion gaming over all else, with a particular focus on the indies. Smaller developers on Xbox, meanwhile, will have to compete with torrents of *COD* DLC and ESPN.

If you're getting the impression that I'm not entirely unbiased, then you'd be right. But I'm no fanboy – I have the full range of current-generation consoles under my TV. It's just that I've particularly enjoyed my 360 and XBLA, and having watched Microsoft's pitch for One, I can't help but feel like I'm being sidelined for fantasy sports leagues and Game Of Thrones viewers. Even Remedy's game appears in thrall to TV, with its live-action sequences. I'm all for progress, but One feels like homogenisation, not headway.
Graham House

This is one of many letters we've received along similar lines, which suggests that Microsoft's Xbox One reveal wasn't aimed at **Edge** readers. How will its E3 showing hold up? Opinions to the usual address when the dust settles, please.

Looking backwards to it

Do we really want a new gaming experience or just an old one repackaged? What excites us about the prospect of a new console, or about an eagerly anticipated next-gen game? Reflecting on all the incoming technology – from PS4 to Xbox One to Oculus Rift – I can't help but wonder whether what excites me about the future is not, in fact, the past.

It's a well-recognised notion in the philosophy of science that the way in which we encounter any given object in the present is largely the result of particular conditions of past experience. Expectations of what we'll see, in other words, tint our perception of the objects that stand before our eyes. One can't simply look into a microscope, for example, and immediately observe the mitochondrion or ribosomes of a cell; the student of biology spends countless hours in the laboratory learning to recognise the minutiae of cells from the images and descriptions prepared for her in a textbook. These prior experiences always define how we view the world around us; and this is equally true of the world of gaming.

There are certain defining moments in my life as a gamer that silently reinforce my anticipation of the future: entering the world of *FFVII* for the first time as the camera slowly panned down over the train pulling into Midgar, waiting for a friend to reach the big jump of Wario Stadium in *Mario Kart 64* so I could use the thunderbolt attack, the anticipation of leaving the vault in *Fallout 3* for the first time. Every gamer has a unique set of gaming memories that defines their future expectations. So could much of the excitement that lies at the edge of our gaming lives actually be a response to the prospect of reliving these great moments?

I can't help but think that what really appeals to us is not so much the promised technological improvements of the future, but the prospect that this technology will enable us to recapture those definitive moments of our gaming lives.
James AT Lancaster

But what about technological improvements making it possible for a defining gaming experience such as *Super Mario 64* to be created? Nevertheless, your fully *FFVII*-compatible PlayStation Vita is on its way.

Words: ReLoaded

Your article 'Loaded Words' (**E**253) described the difficultly in creating a definition for computer games. The problem you presented is to find a form of words that can define the medium in its entirety, encompassing games ranging from *Smash TV* through to complex strategy games. Such a definition also needs to adequately capture the essence of competitive games and open worlds, and it should extend to player-driven creative endeavours such as *Minecraft*.

The Oxford dictionary definition of a game is: "1) an activity taken part in for amusement. 2) a form of competitive activity or sport played according to rules." While the second part of the definition could easily be applied to well-known pub, board or card games, such a definition does not reflect many computer games, where the primary endeavour isn't always one of competition.

Fitting with the thrust of the first part of the definition, Sid Meier's proposal could be widened to: 'a series of interactions that engage the mind'. This would encompass not only a wide range of computer games, but also social games, such as flirting.

E253 seemed to suggest that the lack of a definition for what is meant by a computer game led, at least in part, to the criticism some have made towards *Proteus*. Even if a high-level definition of games were to be widely recognised, it seems unlikely that the existence of it would avoid confusion over the nature of specific titles, given the breadth of the form. And like music, different styles of game appeal to different people.

Rather it is the responsibility of the industry, especially those in positions that

communicate about games – such as marketing departments, developers, reviewers and even players – to accurately describe the dynamics and breadth of possibility within a specific game so potential players can make an informed choice about a title.

Games should evolve a wider range of core game dynamics and with such a change, supported by good communication, will the audience/market grow and sustain itself in the long term. So long as there are games that captivate the mind, I'll continue to play.
William Wood

Sensory deprivation

I play games for the immersion, to be drawn into worlds, not stories, and I know I'm not alone. Oculus Rift genuinely could be the beginning of the next evolutionary cycle in gaming. The potential is huge, and unlike the web, VHS and DVD, Oculus probably won't rely on porn to survive – although the potential for POV with weekly DLC 'skins' (has that term ever been more appropriate?) and Kinect-based hilarity is almost impossible to resist.

My largest concern in this journey towards total immersion is the focus on the visual. Palmer Luckey is correct that vision is our most powerful sense, but I hope they do not ignore the importance of sound in creating mood, atmosphere and a more immersive world. 3D sound can have a massive role in gameplay and can be used to further narrative with details that go far beyond characters' dialogue. It may ruin the sleek curves of the design, but some sort of in-ear device needs to be included in the headset to make 3D audio a fundamental component of VR – not just a feature. I want to see great games set in immersive VR worlds, and I want to hear them as well.
Michael Goodson

> "My largest concern in this journey towards total immersion is the focus on the visual"


James AT Lancaster asks: do fond memories of Cloud Strife's adventures set our expectations for the future of gaming?

Story time

In the opening to the What Games Are article in **E**254, Mr Kelly cites his friend's lack of remembrance about the "typical signs of powerful storytelling" – but this does not remove games from the umbrella. I remember those details (who, wherefore, and why) about the best games I played in my teenage years, just as I do about my favourite books.

The problem is not strictly with being thaumatic, it is with the player's connection to the characters in the game to begin with. Lots of backstory became popular in the '90s. The DS reboot of *Final Fantasy III* is symbolic of this – four characters who were blank and nameless in the original were given default names and context in the reboot. Is it worse to have personalities instead of generic Warriors Of Light? I don't think so. Knowing their stories influenced the jobs I gave them in the reboot, whereas the focus in the original is utility. That's how connected I felt.

Good books don't bog you down in backstory the moment you meet a character, and you'll never find out everything, just like in good games. You don't know much about Wander or Mono to begin with. Then you find out. And it's nice to have some context to his journey beyond 'Got to save this girl.' Yes, the main point of *Shadow Of The Colossus* is the majesty of the (mostly) peaceful creatures you're killing, and the morality behind it, but there's a lack of depth without knowing more.

It seems like a sign of the times, and of where gaming is going, when the plot behind the game is seen as not just secondary, but almost unimportant. Gone are the days when I saw 60:52 as my time at the save point before the final boss. Games are finishing faster now, and because of that there is less room for background padding. *Mass Effect* and *Dragon Age* give you what you need in dialogue, and the rest in optional codex entries. I'm sad to say even I haven't read all of them. I'm not saying *Tetris* blocks should be shown on an assembly line before playing, just that anything with a face should get a bit of context.
Kadeem Beresford-James

That bit of context is all well and good when it's carefully, expertly crafted, but we're still at a point where such content feels like it isn't being treated with the same investment as is funnelled into, say, a game's audio. Ultimately, we'd take a game with no story component at all over a game with a dreadfully realised one every time.

ONLINE OFFLINE

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Your take on the Xbox One reveal

Installing games? I remember that from the '90s PC gaming. Oh wait, and modern PC gaming. And it runs Windows? Can't I just plug my PC into my telly?
Chris Lewis

Always online? And for that reason I'm out.
Mick Preston

Impressed by the OS on One, very slick. No backwards compatibility is hardly a surprise, and the preowned games deal needs clarifying. A boat load of exclusives, nicely refined controller and a Kinect that actually works is great though. Just need to see some games.
Jamie Salmon

If your taste in videogames is compromised solely of *CALL OF DOOTY: MARLEY AND ME*, or *FIFA 10,000*, then by all means be pumped for the Xbox One, which is a stupid name by the way.
Ben Collins

I'm not quite sure what I just watched. So it's basically a Sky+ box that plays EA and Activision games?
Steven Hamer

For the jaded cynics, go design your own if you think you can do better. Otherwise, accept it, decide if you want it, play it or leave it. Just stop being so bloody negative.
Duncan McMillan

A PC and a Super NES is all a guy needs!
Thomas C Jones





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STEVEN POOLE

Trigger Happy

Games don't need to be more realistic per se, but logical coherency is the key to suspending disbelief

Most laser-based videogames would break if lasers in videogames behaved like lasers in real life – arriving effectively instantaneously at their target. It would be impossible to dodge alien laser fire, and there would be no challenge in hitting aliens with your own laser. So I pointed out in Trigger Happy back in what I, in conversation, still feel the need to call "the year 2000". Imagine my pride and delight this month when someone built a demonstration of my micro-thesis. Darren Osadchuk's demo is called *Space Instavaders*, and is an interesting version of Taito's classic in which the enemy can shoot you with near-instantaneous laser fire. (It's animated, to provide visual interest, but still so fast it's impossible to dodge.) The result is that your deaths feel arbitrary and somehow profoundly sad, the outcome of the war you are fighting single-handedly against the alien hordes just a roll of the dice by an uncaring cosmos.

Which inevitably reminded me of another war I have recently fought against alien hordes – the conflict in *Halo 4*. But there's a crucial difference: the laser turrets you encounter there behave impeccably, shooting you instantaneously; the reason this doesn't break the game is that they glow and charge for a long time beforehand, so you know to get out of the way or destroy them first. (Let's agree that the energy-projectile guns aren't quite lasers, whatever they are.) Score one for the realism of Master Chief's newest campaign.

At some point during a playthrough of 343 Industries' game – both reverent homage and authentic sequel – I decided that *Halo*, for me, is really all about knowing just when it is appropriate to charge right at an enormous alien while emptying a whole clip into him, timing this perfectly so that just when your bullets run out you are close enough to deliver the coup de grâce by bashing him in the face with the stock of your rifle. I've done this in every *Halo* game, and will probably never tire of it. And the success of such a tactic (or, perhaps, space-Rambo anti-tactic) is perfectly realistic within the game's fiction.

It's not, however, as though *Halo 4* doesn't contain other examples of what I once called causal and functional incoherence, both of which ideas are probably covered by the recently fashionable phrase 'ludonarrative dissonance', which sounds very technical and respectably academic. All doors are still immune to the most awesome firepower, and – spoiler alert – unless I wasn't paying attention during a crucial bit of exposition (I probably wasn't, but still), I doubt it will ever be possible to evade annihilation by a nearby nuclear explosion through the expedient of somehow temporarily subliming into a glowing blue computer-code universe before coming back to the real world and drifting groggily through orbital rubble.

One can still think of myriad other ways in which making games more realistic would suck all the joy out of them – or at least shunt them into the genre of po-faced gearhead simulation. I'm not an aeronautical engineer, but I'm pretty sure *Halo*'s Banshee is more manoeuvrable than any vehicle flying in atmosphere has a right to be. And to switch genres to tactical espionage action, the fact that Solid Snake can carry around a dozen guns and half a dozen different types of cardboard boxes, as well as mines, gadgets and cigarettes – all without toting a massive Ted Baker manbag or even just allowing his sneaking suit to bulge visibly – is part of those games' knowing comedy.

But we can also imagine ways in which making videogames more realistic – in the sense of fictionally consistent – would improve them. Tim Rogers' epic anatomy of *BioShock Infinite* has enumerated a host of comically weird and thoroughly disposable incoherencies in that game. More generally, I suggest we take a stand against the notorious and mystifyingly common phenomenon of bullet sponges. If the enemies in your shooter are humans, making them bullet sponges is always a stupid way to maintain challenge. A soldier who requires 11 shots to the body (and often multiple headshots) to go down makes you feel like your guns are shooting foam pellets, and thus directly harms the game's kinaesthetic pleasure. Making enemies susceptible to fewer bullets will be more realistic, and will also improve the game's feel. If your game is then too easy, you need to augment the enemies' numbers, firepower, or intelligence.

> A soldier who needs 11 shots to go down makes you feel like your guns shoot foam pellets

The fact that the phrase 'bullet sponges' even exists as mocking gamer-speak should have wiped out this phenomenon years ago, but still it persists. Of course, the aliens in *Halo 4* are bullet sponges too, but that's all right, because I'm not a xenoanatomist (and nor is anyone else), so I have no grounds to disbelieve these creatures' remarkable capacity to soak up ammunition. And if they weren't bullet sponges, I wouldn't have the joy of performing my signature rush-and-bonk move. So this is an important way in which story in games matters for our experience of form itself: a design decision that is cheap and harmful in one kind of fictional scenario is perfectly acceptable in another.

Steven Poole is the author of Trigger Happy: The Inner Life Of Videogames. Visit him online at www.stevenpoole.net



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LEIGH ALEXANDER

Level Head

A reliance on big names is unhealthy for game journalism. We should be crowning new kings

What good are game journalists anyway? The traditional development community has always had, at best, a thin tolerance for the game press – glorified fans, in their view, who they need to stroke in order to get crucial Metacritic scores, but must otherwise ignore, lest they carry on propagating predatory pull quotes and misinformation.

Developers and readers often ask me why I think game journalism is important. Aren't we a largely superfluous mediator between the industry and its obsessive fanbase, and increasingly irrelevant in the age of user-generated content and social media? What qualifies us? All good questions, of course, but in a perfect world game media would be a diverse array of cultural thought leaders who are helping negotiate the growing audience of games and evangelising innovation to brand-new audiences. By leading the conversation about the industry and the things that it makes, we have an opportunity to help create and shape culture. And a healthy, engaged culture is essential to the legitimacy of an expressive medium.

The resentment of vocal, traditional developers is pretty ironic, because it's the adulation of the gaming press that has helped venerate them. Having celebrated figures in our field to write about makes us feel like our work is culturally valuable when we're feeling insecure. Why has the press historically rushed to attribute entire franchises to just one individual? Because we want heroes. Generating a celebrity culture feels like it may be an antithesis to our history of evaluating games as products to put numbers on.

Knowing 'names' makes writers feel like experts, and so much of our interaction with the industry is carefully choreographed by marketers that an outspoken individual who's willing to say personal, inflammatory things feels like a superstar. We're all too happy to conflate the fact they're known, vocal and individualistic with whatever contribution we've presumed they've made to the legacy of the industry. The business's emphasis on veterans is founded in no small part on the press's desperation for heroes and experts. If a gamer has heard of you, it's more likely because the press helped contribute to your publicity storm by magnifying your personality through those detested pull quotes, not necessarily because your work changed the world.

> Yes, we respect everyone who's contributed, but our culture of veteran worship is dated

All of the above isn't to diminish the accomplishments of the founders of popular franchises – not much, at least. And yet for every figurehead that fans crown, there are exponentially more development veterans with ten, 20, or even 30 years of industry experience working quietly across time on an array of tech, art and design innovations, and who fans have never even heard of. I wonder if they're frustrated we writers don't get to meet them. Maybe they're relieved.

What's interesting about our easy reliance on celebrity, our instantaneous trust in and weighting of long-standing 'big names', is that equally if not more important disruption is coming from totally new voices. It is newer, younger developers and studios that are leading the growth and proliferation of a creative, legitimate games space. It's the growing cluster of individuals making expressive works for art, not money; indies pioneering never-before-seen technology and tools creation; entire communities tackling long-standing design problems such as how to depict love, how to address political and social injustices, and how to make beautiful design objects that look cool on your iPad.

Yet despite the fact the gaming press and our readers are getting tired of the numb onwards march of the constrained, repetitive commercial industry – or a good many of us are, at least – we still treat franchise heads and last-generation veterans as if they are the authoritative opinion on our future. Certainly, we respect everyone who's made contributions to the game industry, but our culture of veteran worship is dated and problematic (such as when David Jaffe makes an ill-advised prescription to 'fix' games journalism, refers to me as 'that woman', and people actually treat his opinion as an event).

I am regularly asked by aspiring writers how they might get into game journalism, and my advice is always the same: write about the creators that aren't getting covered. Writers at mainstream outlets are to some extent locked collectively into a more traditional relationship with the industry and their audiences, but new writers aren't beholden to those rules. They have the luxury of discovering and spotlighting our generation's brand-new trendsetters – any single creator spotlighted on a site such as freeindiegam.es probably has more to add to the videogame conversation than someone who helped launch the original Xbox.

We live in a different world now, and if the press has anything to offer, it's to illuminate and explicate our changing business and culture. It should be our job primarily to look forward and to illustrate the way our space is evolving, rather than obediently communicating the lessons of its past.

Leigh Alexander is a widely published writer on the business, design and culture of videogames and social media



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BRIAN HOWE

You're Playing It Wrong

Following a bulging nappy load of family gaming journalism, YPIW decides to get in on this geek fad

The first generation of lifelong gamers has reluctantly grown up, with many of them somehow persevering through *Pokémon* habits to procreate. And if remaining childless is a decent excuse for gaming into adulthood, having kids is an even better one: they're going to play anyway, so why not make it a bonding activity while getting your fix too? As the parental role shifts from miserly dispenser of tokens to gaming buddy, there's a boom market not only for family-oriented software, but also family-oriented gaming journalism. Gamer dads – almost always dads – have been gobbling up column inches like mad lately, reviewing kid-friendly titles and editorialising trending parenting issues. I don't think it's fair that I should miss out on the action just because I'm a childless 33-year-old hobo. So this is You're Playing it Wrong's essential guide to gaming with kids, based on everything I know about their behaviour patterns, their physiognomies, and their basic needs.

The first question you'll ask yourself after your little one pops out of the spawn point is how soon should it start gaming? The answer is immediately. A doctor, grandparent or concerned passerby might allege that exposure to videogames is bad for newborns. I guess it's reasonable to wait a week or two till the baby's soft, googly eyes firm up and its thumbs become opposable before handing it your 3DS. But generally it's fine if you just turn the TV's brightness down, which protects the baby's eyes from harsh glares while also hardening them faster as they scan for targets in the gloom. Think of all the years you wasted before developing your depth perception and twitch reflexes, and how much you resent your parents for that. If you start your kid from day one with something easy like *Bulletstorm*, then by the time it learns to talk (maybe six months later), it will thank you for its prematurely adult-sized thumbs and be a valuable asset in Horde Mode. Just remember to keep the volume low, because babies have holes in the tops of their heads that make them hypersensitive to surround-sound explosions.

The second question you'll confront is, can I be a good parent and still maintain all my MMORPG alts? And the answer, sadly, is no. It seems that babies require almost daily feeding, watering, cleaning, serenading, dandling, scolding, consoling and exercising, not to mention the recommended monthly defragmentation and fluid changes. You're going to spend at least two hours a day hand washing paper money, which is all they eat, and several more performing the arcane rituals that render them unconscious. It's really not their fault: they go through so many changes in the short time between when their gills close up and their tiny vestigial wings fall off as their psychic powers start to fade. They just have a lot of needs. Gamer moms can handle many of them while gamer dads power-level avatars and type columns, but doing things with/to the baby in meatspace will be unavoidable. Promisingly, a forthcoming app for Google Glass overlays a health bar and timer on mundane tasks such as nappy changing and story reading – an innovation that exemplifies why Google is trouncing its competitor, the Yahoo Pince-nez.

> Kids go through many changes between when their gills close and vestigial wings fall off

You also have to consider what kinds of games are appropriate for your baby, who will be mysteriously drawn to shovelware, likely because of its deceptively festive box art and age-appropriate themes. This will be intensely frustrating when *BioShock: Infinity+1* or whatever just sits there still in its shrink wrap. But if you like the baby, as you probably will, you'll have to bear it, consoling yourself with the knowledge that it will someday turn into an actual human that can execute a flanking manoeuvre and follow your *Metal Gear* theories. Until then, there are supposedly plenty of licensed titles out there that are fun for both kids and adults, a few of which don't even require you to buy dozens of toys. And there's always the steady stream of tolerable genre iterations. My favourites from this month's promo pile included *Generic Family Sporting Competitions*, *Generic Family Party Game* and *Wii Paddleball*. The last one is useful because its repetitive quality makes babies groggy, and once they're tranced out, you can play a real game.

Speaking of games in the *Skylanders* vein, a rumoured new franchise stands to revolutionise the way we game with children forever. *Babylenders*, slated for a Christmas 2015 release – pending the resolution of certain technological and legal issues – works a lot like *Skylanders*, except that instead of a figurine, you place your baby into the Bassinet Of Power to scan it into the game. Then you level up its avatar through arena battles against other virtual babies while its physical body is maintained by nanobots. You'll be able to trade or even win babies from your friends, building your army and hunting down limited-edition babies in puce, zircon and radioluminescent varieties. Gaming with kids may be a hot topic now, but gaming *with* kids is the future (and it's fine because, as we all know, children don't develop feelings until age 3 or 4 – until then, they're like cute lobsters). It's almost enough to make a childless hobo reconsider.

Brian Howe writes about books, games and more for a variety of publications, including Pitchfork and Kill Screen

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THE GAMES IN OUR SIGHTS THIS MONTH



Winning over gamers

On a wall in PopCap's Seattle HQ hangs a whiteboard. Pinned to it is page after page of hand-drawn suggestions for new plant and zombie designs sent in by children from all over the world. Some are outlandish, a handful positively game-breaking, but many look like they could easily feature among the cast of the studio's new game.

A wall in CD Projekt Red's Warsaw base, meanwhile, holds a collection of images that offers inspiration for the three regions of *The Witcher 3: The Wild Hunt* (p40). Views over *Skyrim*'s frozen tundra sit next to shots of Game Of Thrones' Winterfell, the orange glow of Big Ben at sunset, and paintings of medieval Amsterdam.

Their inspirations may vary – as do the relative scales of the games they're working on – but both studios are setting out to prove something to much the same group of people: gamers like us. With *Plants Vs Zombies 2* (p46), PopCap wants to show the sceptical that free-to-play doesn't have to feel like a stick-up. And while we're sure none of you voted EA the worst company in America for a second year in a row, the *Peggle* maker wants you to see that it's very much business as usual under its new owner.

CD Projekt's goal is rather grander. This Polish indie seeks to prove that open-world games aren't the sole preserve of the big boys, and that you don't need the gargantuan team sizes of a Rockstar game to create a vast, coherent world. In Geralt Of Rivia, it has a protagonist with personality and history, one who brings a narrative weight that Bethesda's typically blank slate avatars can't match.

Clearly both CD Projekt and PopCap have far broader audiences in mind for their respective sequels, but both games treat serving the educated player as a core design principle. That, so soon after the Xbox One announcement, is a heartening thing to see.

MOST WANTED

Wonderful 101 Wii U
It's difficult to recall a game as downright charming as *Wonderful 101*. Its bright colours and the chipper yelps of its cast of heroes are in danger of undermining all that mild peril, but we can't wait to gang up on huge enemies that refuse to pick on something their own size.

Ghost Of A Tale PC
There are shades of *Dark Souls* in Lionel 'Seith' Gallat's recently funded Indiegogo project. Gallat was animation director on Despicable Me, among other films, but now he's working full time on an adventure about a little mouse in a very dangerous world. His distinctive vision is equal parts bewitching and sinister.

Watch Dogs Xbox One, PS4
On p18, we learn that *Watch Dogs* on Xbox One and PS4 will not only feature graphical improvements, but also cities with a higher number of people, cars and physics objects. All the more reason, then, to hold out for the next-gen version.



THE WITCHER 3: WILD HUNT

We track down the Polish indie building a hugely ambitious next-gen RPG

Publisher	CD Projekt Red
Developer	In-house
Format	Xbox One, PC, PS4
Origin	Poland
Release	2014

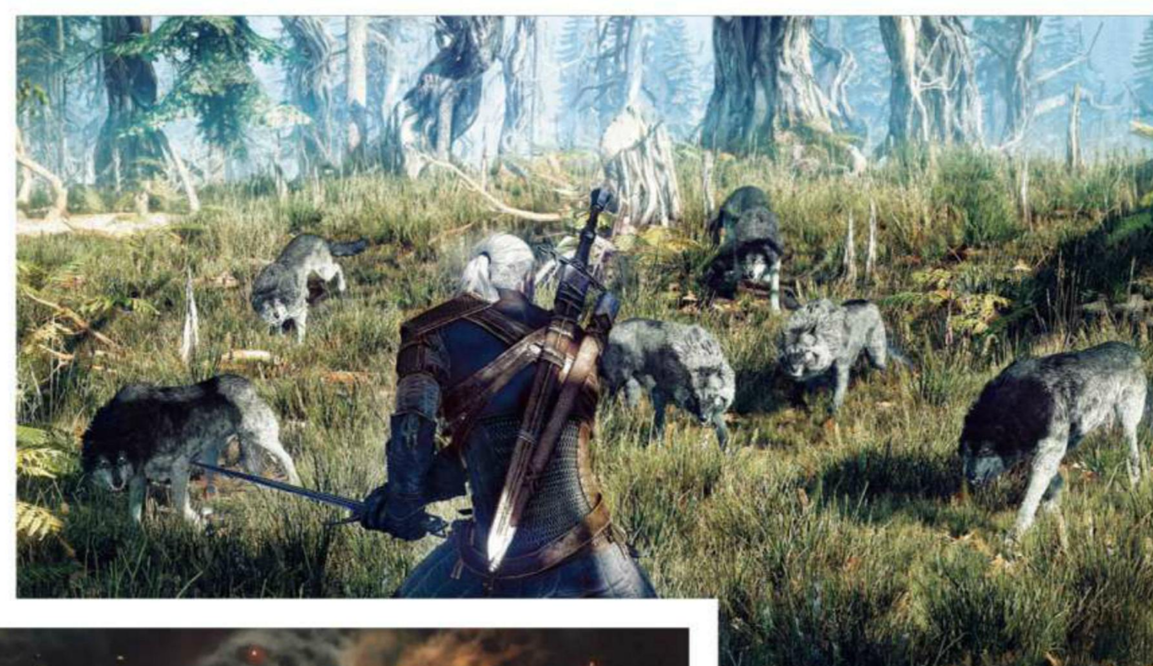
The Fiend, shown here in its full glory and on our cover in decapitated form, is one of *Wild Hunt*'s toughest enemies. It hits so hard that its attacks can't be parried, so it's a good job Geralt has a graceful new dodge



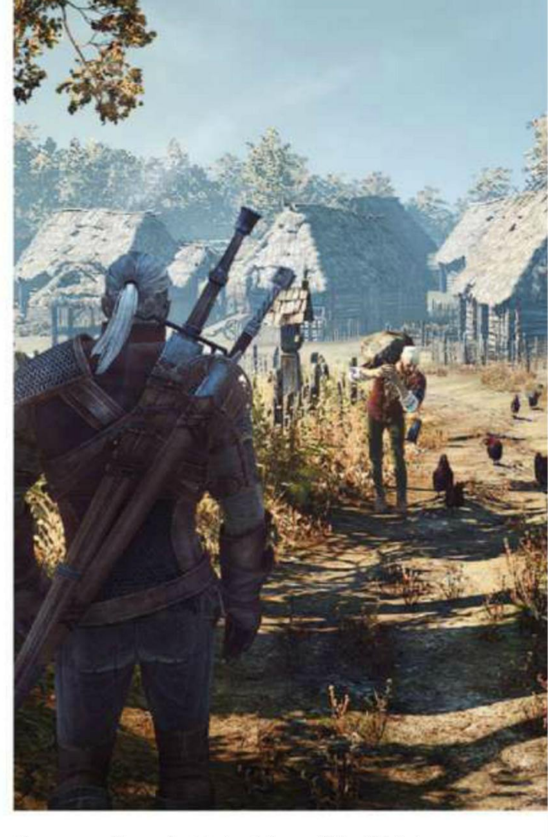


THE WITCHER 3: WILD HUNT

RIGHT **Geralt's posture will shift depending on how he feels about his task. Here, he seems wary of where the first attack is coming from.** BELOW **This burning village is the most dramatic part of the new DirectX 11 tech demo, which shows the level of visual fidelity that's being targeted for the final game**





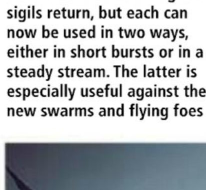


An open-world game is a huge undertaking for any studio, let alone a Polish indie with a track record in story-driven RPGs. But CD Projekt Red is no ordinary indie. Together with its sister companies – the Good Old Games download store and CDP.pl, a localiser and distributor of English-language games in Poland – the group is listed on the Warsaw Stock Exchange. The studio's inauspicious offices, tucked away at the back of an industrial estate, hold 160 staff at present, but the team's still hiring. Just 89 people work on *The Witcher 3: Wild Hunt* directly, developing nearly everything in-house with proprietary tech. It's by far the studio's most ambitious project to date.

But CD Projekt Red isn't only building a world, it's working to improve just about every aspect of the series' mechanics, and seems fully aware of the mistakes it's made in games past. *The Witcher 2* assumed players were familiar with the original, so the initial PC release threw them into a warzone and just let them get on with it. A tutorial was added to the console version that followed, but went too far the other way, presenting players with an avalanche of information about its combat system. "The introduction to the game's world will be really smooth this time," gameplay producer **Marek Ziemak** assures us. "We had a lot of feedback from players after *Witcher 2* about the beginning of the game, both in terms of gameplay and storyline. We really want to improve the very beginning."

That, we're told, will mean no overt tutorial, with mechanics gradually introduced in the game's opening hours instead, although managing director **Adam Badowski** insists it will be done elegantly. An external QA firm, one of very few outsourcers on the project, worked closely with CD Projekt's artists and designers in preproduction to ensure *Wild Hunt*'s start will be much smoother. "We're going to incorporate small tutorials into the quests," Badowski says. "We're trying to avoid the situation with *Red Dead Redemption*, for example: that very generic beginning. It blocked me for a while. A month [later], I started again, and that game is amazing. We'll have a small learning curve, and all those small combat tutorials we'll build into the quests as part of the world."

Even old hands will need those tutorials, because the combat system has been changed significantly. The dodge is the first thing you notice, *The Witcher 2*'s clumsy barrel roll cast aside in favour of more balletic moves that, lead gameplay designer **Maciej Szczesnik** tells us, are more respectful to the series of novels by Andrzej Sapkowski on which the



These go to 11

Our demo runs on an improved version of *Witcher 2*'s renderer, which is based on DirectX 9. But the team intends to use DX11 for the final game, the benefits of which are made clear in a tech demo (also used to provide some of the screenshots here). A side-by-side comparison showing Geralt walking towards a burning village offers a tantalising glimpse of the coming gen. "All the next-gen platforms look similar from a technical point of view," Badowski says. "There are differences in user experience, but they're all 64bit architecture, DX11 or something similar, [which] puts us in a very comfortable situation."

BELOW **Geralt's five magical sigils return, but each can now be used in two ways, either in short bursts or in a steady stream. The latter is especially useful against the new swarms and flying foes**



LEFT **Badowski is coy on the game's target framerate, and we suspect he's mindful of Microsoft not having shown its hand when we meet. "Thirty frames [per second], with such a huge, dense world, is good enough. But we'll see – it's still too early to judge"**

games are based. "We were always thinking about having those pirouettes, because Sapkowski, the original author, wrote about Geralt's combat in that way – always using those moves, like he's dancing with a sword. Now we really want to execute it properly."

'Execute' turns out to be a smart choice of words when we watch Geralt Of Rivia cut swathes through a group of bandits who foolishly set upon him in a forest. Later on, a morale system will give him the chance to spare them instead, and you can loot them either way. But today he's in a killing mood, and the action is more methodical and precise than ever. Both Geralt and his opponents move at walking speed, and the camera zooms out a little so you can see what's going on behind you. "The combat now is much more intimate, more intense," Ziemak says. "It's closer, more personal, and a bit more bloody."

It's more natural, too, a consequence, Szczesnik says, of many of the development staff being real-world swordsmen and women themselves. "Lots of people in the company fight in brotherhoods – you know we have them in Europe? They take part in battle re-enactments. They're kind of freaks [for] medieval armour and swords and all that stuff. We want to make it really believable."

Geralt is a monster hunter by trade, however, which means many of his enemies will be too large or feral to wield swords. Our demo concludes with Geralt and an NPC companion taking on a giant in his lair. Enemy AI has been improved to the extent that our foe is aware of his surroundings, ripping stalactites from the ceiling to swing at us with abandon. Were we to move the fight outside instead, his attack patterns would be different. Using Witcher Senses – a new ability, clearly building on the *Arkham* series' Detective Mode – you'll be able to identify enemy weak points. Target them and you won't just be depleting a health bar, but a moveset; hack off an arm, for instance, and your foe might lose his most powerful attack.

Witcher Senses are used outside of battle as well. We see Geralt turning a corpse and a bloodstain into a ghostly replay of the events



leading up to them, then tracking a murderous giant back to its dank lair.

And while not entirely new, alchemy has also undergone refinement. Long-duration potions that buff stats and grant powerful boons are still brewed off the battlefield, but they can now be used during combat. "You trigger the effects of those potions whenever you like," Szczesnik says. "We're experimenting with that right now, so it's not confirmed 100 per cent, but we plan to have those potions not wear off. You'll just be replacing them when you drink another one." Reading between the lines, it seems the change is being prompted by many players barely indulging their inner alchemists at all: "It's a huge problem in every game I know. People tend to not use potions because they stack them – they try to keep them for later."

Almost everything, then, has changed, including the world. You've seen the headlines by now: *Wild Hunt*'s map is 35 times the size of *The Witcher 2*'s, and 20 per cent bigger than that of *Skyrim*, although Ziemak stresses that

> ***"That's the core of The Witcher 3: the main story. It's 40, 50 hours, plus the open world"***

size isn't merely a matter of geography. "*Skyrim*, which I think we all love, is a rather short game in terms of the main storyline," he says. "If you just want to focus on that element and you're not that interested in exploring the world, it's not that big. But that's the core of *The Witcher 3*: the main story. It's 40, 50 hours, *plus* the open world."

CD Projekt Red claims there will be another 40 to 50 hours of gameplay in the wider world, and that all of it matters: there will be none of what Szczesnik calls "Fedex quests". Much of it will come from the series' stock-in-trade system of choice and consequence, which will now see the results of your actions ripple across the world. Local communities, each with daily and nightly routines, will react to you in different ways depending on choices made elsewhere. "You can expect that each of your decisions will have serious, meaningful consequences," lead quest designer **Mateusz Tomaszkiewicz** explains, "but at the same time it's not obvious what those consequences will be."

It adds up to a series that only seems to be gathering momentum, with around 75 per cent of the team that worked on *The Witcher 2* and a third of the original game's development staff still on board. Meanwhile, Badowski is hiring from all over the world to help realise the team's ambitions. And with mid-tier studios bearing the brunt of big publishers' risk aversion globally, there's an obvious attraction to a growing indie studio that owns its IP and is so confident in its abilities that it was among the first to tip its next-gen hand.

CD Projekt Red's confidence also extends to its in-house tech. Badowski candidly admits that neither the BioWare Aurora engine used in *The Witcher* nor the RedEngine 2 that powered its successor were up to the demands of the job, but "now the technology is fully capable and it's ready to create an open world". There's an improved facial system, with the addition of 40 bones to power more expressive NPCs; another in-house program gives artists the power to change the fabric, pattern and colour of NPC clothing with a few clicks. And how many indies do you know with a mo-cap studio in the basement? ("We do everything in here," Badowski says, "except the horse. He wouldn't fit through the door.") Everything has been set up to enable CD Projekt Red to create content and make changes quickly. The day before our arrival, it upped and moved a mountain.

Yet the team is mindful of its roots. *The Witcher 3* is, like the two games before it, an RPG first and foremost. Badowski sees all these improved elements – the gentler introduction, the combat, the climate and communities, the scale of it all – as a means to do one thing more effectively. "We don't want to build a sandbox experience; we want to keep storytelling as the main goal," he says. "This studio will develop RPG games forever. We are storytellers." If CD Projekt Red can pull it off – if it can take on some of the biggest videogame companies in the world at their own game and create the next generation's first great open-world game – it will be the greatest story it has ever told.

Q&A
Jakub Szamalek
Writer, *The Witcher 3*



This is billed as a more personal story. How do you cater for players who have come for the politics of previous games?
The player will have the occasion to follow Geralt and meet his old friends and the truly important people in his life, but there's also the political background. It's not essential for following the main storyline, but it's there, and if you're interested in it you can delve into it and you can go very deep. There's a lot of stuff happening, and if you follow sidequests, or talk to certain people, you will then learn what's going on.

This is CD Projekt Red's first open-world game. How do you decide what lore to present and what's hidden in the world?
It's obviously a difficult process, because we'd like to make the game as deep and mature and immersive as we can, but at the same time we don't want new players to bounce back off a wall of facts and new characters. We're working very hard on telling all these things about the world [and] about the lore in a natural way.

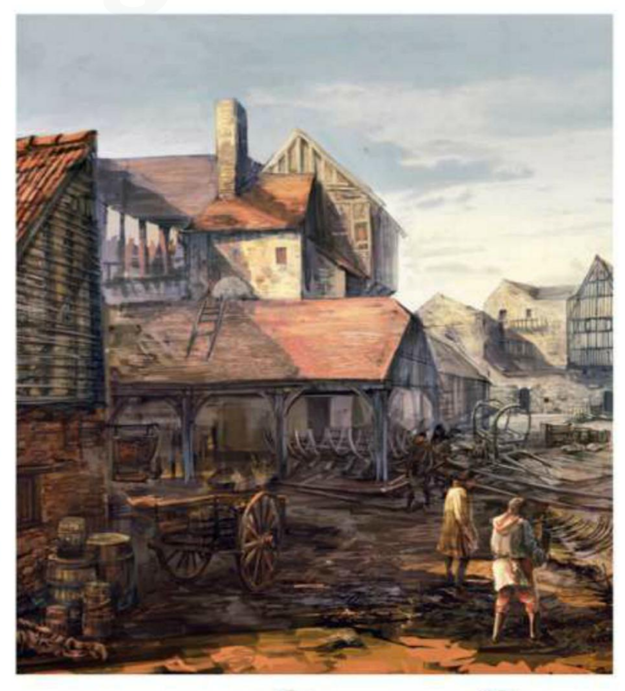
Something you see in movies that hasn't been done to such an extent in videogames is the information that's conveyed to you in dialogue, [but] you're not feeling like someone's telling you something you need to remember. In the first scene, you hear someone addressing someone by his title. It doesn't feel like a business card, but you know who that person is – we're concentrating on doing that as much as possible.

Are you respectful to the source material?
I think we're as respectful as we can be. Sapkowski is extremely good at writing dialogue, but he has few descriptions in his books. So you can hear characters talking with each other and this sort of tells you what the world looks like, but there's very little actual information on what Vizima looks like or what Novigrad looks like, and this is something we have to imagine and create. But when it comes to characters and their motivations, and the political background to this world, we follow the original vision pretty closely.

How important is it to have a strongly defined character like Geralt in an RPG, especially an open-world one?
From a story team perspective, it's very important. It helps us to create a story that really feels personal, and real, and mature as well. If we have a given character with particular traits – friends, enemies and history – it's easier to weave a story around it. Whereas if you have a character who's a blank slate, it's very difficult to create meaningful quests.







TOP **Skellige, a Nordic-style archipelago, hosts our demo; the final game will also visit the Slavic-like No Man's Land and city of Novigrad.** RIGHT **Environment artist Jonas Mattsson explains how CD Projekt Red's tools generate forests: "It starts where water gathers. You get natural density… then we go in and make it look unique along the paths"**

Design showcase

CD Projekt Red's most ambitiously detailed world to date presents natural beauty and fiendish challenges to players

BELOW **Perhaps the biggest change to Geralt is his new jump. Mattsson admits it's a challenge: "People will find stuff [they shouldn't]. When I play *Skyrim*, I always try to jump up mountains"**

Geralt will be able to use Witcher Senses to pinpoint enemy weak spots. Assuming he can stay out of the way of its horns and claws, he'll want to aim straight for the lungs, where The Fiend is most vulnerable



Plants Vs Zombies 2's central theme is time travel, and PopCap's flair for character creation is plain to see in the appropriately remixed zombie designs. But the change isn't just for show, with profound gameplay differences between worlds, too

HYPE

PLANTS VS ZOMBIES 2: IT'S ABOUT TIME

PopCap repots the series in free-to-play soil

Publisher	EA
Developer	PopCap Games
Format	Android, iOS
Origin	US
Release	July



You can hold only three doses of plant food at once, so when a zombie drops more, you might as well use some to make room for it. It doesn't carry over between levels, either, so you can use the lot on the last wave

The subtitle says it all: it's about time. Four years after the PC release of *Plants Vs Zombies*, PopCap is at last ready to show off the sequel. That's a long time, especially given the game in question is an accessible spin on tower defence made by a tiny team. It seems even longer if you consider that the only new game the studio's released in the nearly two years since EA bought it is *Solitaire Blitz*. 'It's about time' is putting it mildly. What took so long?

In truth, lead producer **Allan Murray** tells us, PopCap hasn't spent the past four years on *Plants Vs Zombies 2*: it's been working on the original, too. Since its 2009 PC debut, that game has made its way to just about every platform around, and has been installed over 150 million times. "PopCap isn't really a place that rushes to do sequels," Murray tells us. "The first couple of years was just [spent] getting it out to DS, to console, to iOS, and eventually Android. A lot of care and attention went into those – they weren't just quick ports. What you're playing now has been made by a team that's come together in the last year and a half to two years."

A lot of care has gone into the sequel, too, with the team – currently 26 people, making this PopCap's biggest project to date – keenly aware of the danger of making what could be seen as an expansion pack. But 'it's about time' is more than a mea culpa for the four-year wait, it's a concept that anchors the entire game. Partway through the first *PVZ*, players find a taco, for which Crazy Dave, their loose-screwed mentor, pays $1,000. With the first game's undead invasion dealt with, Dave eats the taco, and loves it so much that he wants to eat it again. "Not just another taco," Murray explains. "The same taco. So he brings out his time machine – because, of course, Dave has a time machine – and you go back in time to find the taco."

Naturally, Dave being Dave, his time machine (named Penny) doesn't take him back

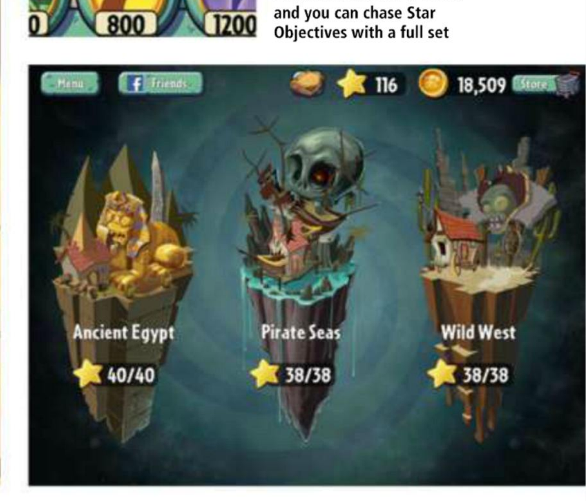


PLANTS VS. ZOMBIES 2

BELOW **Having Tombstones block your shots makes a huge difference – in the first game you couldn't plant on them, and enemies might spawn on them, but they were rarely a threat. Now you must deal with them**



Each world has a 'blacklist' that removes certain plants – we were thrown by having to start Pirate Seas without our go-to Potato Mine. Clear a world and you can chase Star Objectives with a full set



five minutes, but thousands of years. Thus players will travel through time to different worlds in different eras, three of which will be available at launch. It's a setup that allows PopCap to play with convention while staying true to what made the original so special. It also means world maps, with branches off the critical path leading to the minigames and challenges that the original buried in menu screens. Clear a world, and you'll be invited to replay its levels in different ways in exchange for stars. One such objective has us clear a level with a limit on the number of plants we can have onscreen at a time.

Each world sees standard enemies reskinned, has a few new ones of its own, and offers a spin or two on the original game's level design. In Ancient Egypt, trios of zombies try to pass themselves off as camels, holding up one-third of a crudely sketched tylopod each; another, modelled on Ra the sun god, uses his staff to draw *PVZ*'s most vital resource, sun, towards him. Tombstones now block your shots and must be destroyed, while sandstorms carry zombies across the map at speed. In the Pirate Seas, zombies shamble across planks from their ship to yours. With only three or four planks to go around, there will be gaps normal foes can't pass, but you'll need to watch out for the cannons that fire small zombies over large distances, as well as the canny zombie that rope swings over gaps. Wild West's central conceit is a mine cart that can be dragged along vertical tracks as enemy wave patterns dictate, the trade-off being that you can only plant on the cart, not the track. There's a spin on the original game's Disco Zombie, with a piano-playing undead who causes those around him to dance and switch lanes. And then there's the Chicken Farmer, whose flock rushes at you when you hit him.

A zombie modelled on Ra the sun god uses his staff to draw vital sun towards him

Not all the original game's plants have made it into the sequel – no night levels means no mushrooms, though the team hopes to reintroduce them at some point – but there are plenty of new ones to make up for it.



And yeti it moves

In *Plants Vs Zombies*, a yeti appeared on your second playthrough of the game's fog levels, and he'll be a similarly sporadic presence in this sequel. He'll appear on the world map for a set period of time – a day or two, perhaps, or even just a couple of hours – and Murray compares him to *Diablo III*'s treasure goblin. Kill the yeti, and he will drop his loot-filled lunchbox. It's a simple enough concept, but given its host platform, it's a masterstroke: a push notification will let you know where the yeti is and how long he'll be there, pulling players back into the game with the lure of a hefty loot drop.

The world map doesn't just show levels, but the plants you've collected on the way (as well as a glimpse of those you haven't yet acquired). Branches off the beaten track are behind gates, which are unlocked with randomly dropped keys

The Bloomerang's shots reach the far end of the screen and hit enemies a second time on their return. Bonk Choy punches enemies that draw near, the Snapdragon emits a wall of fire that hits zombies in three lanes at once, and any zombie eating the Chili Bean leaves a trail of paralysing gas behind him. Meanwhile, Lightning Reeds fire bolts of electricity at enemies anywhere onscreen, and turn the farmer's flock into little buckets of fried chicken. The Coconut Cannon is a further deviation: you tap on it to fire, and wait for a cooldown before you can use it again.

That's emblematic of a game that is much more involved, and a good deal pacier, than its predecessor. In *PVZ*, it was all too easy to settle into a groove, relying on the same plants and setting up in much the same way each time, with only certain enemy types requiring you to briefly change tack. Here, there always seems to be something to do – to the extent that the team is still debating whether coins and gems dropped by fallen zombies should be automatically collected.

The game has been built around multitouch – little surprise given how at home the first one feels on iPad – and the two biggest mechanical shifts in *PVZ2* have both been designed with its new interface in mind. Plant Food can be dragged and dropped







The special moves are nice touches, if you'll pardon the pun, but aren't essential. We'll admit to forgetting they were there till one final wave was dispatched almost entirely using Power Toss

onto plants to momentarily power them up: peashooters become gatling guns, while Wall-nuts get shrouded in iron. Then there are three special moves: Power Pinch, which decapitates zombies; Power Toss, where a flick upwards launches enemies into the air and a swipe flings them offscreen; and Power Zap, where tapping, holding and dragging between enemies electrocutes the lot of them. Your stock of Plant Food is replenished by drops from glowing green zombies; special moves can each be used once per round, and cost you the coins you accrue through play. Or both can be bought through in-app purchase.

Plants Vs Zombies 2 is free-to-play, and PopCap is keenly aware of the tightrope it walks. It is, after all, every serious gamer's favourite casual game developer, but the four years since the original have seen massive change, and many view F2P with suspicion now. Does the team feel the pressure to get it right? "God, yes," laughs Murray. "There's this 30-ton weight on our shoulders right now, we're hyper-aware of it. Frankly, it's been something that the team has really struggled with: how do we do it right? How do we do it in a way that we believe in? We're just trying to find a really good balance. We want people to play and enjoy the game, and not feel like they're being bilked all the time."

There are items for sale that can't be earned through play – permanent boosts that increase the amount of sun yielded from each sunflower, for example, or your stock of plant food – and a handful of premium plants. Murray insists, however, that every level in the game can be completed with the free tools with which you're provided. There are none of the content paywalls found in so many other App Store successes, and there's no energy system either. You can sit and play through the entire game in one sitting, if you've got about 15 hours to spare.

Balance will be key: in free-to-play games, difficulty spikes can be great revenue streams. *Plants Vs Zombies 2* is pacier, and at times tougher than its predecessor, but we see nothing in our time with the game to suggest that PopCap is turning to the darker side of free-to-play design. Murray says EA, which presumably would like a return on its $750 million investment, has been surprisingly hands-off. "Honestly, it hasn't affected our day-to-day development. The question we get asked is, 'So, you're part of EA now. They made you make it free-to-play?' We were already leaning towards that; it's something PopCap has been doing for quite a while. There wasn't any sort of top-down mandate."

> ***"We want people to play and enjoy the game, and not feel like they're being bilked"***

Murray is full of praise for the logistical support available within EA – in QA and networking, as well as a network of studios that openly shares knowledge and experience. It also means the studio has a presence at E3. But he is fully aware of the stigma that comes with being part of EA; that there will be a vocal minority openly wanting *PVZ2* to fail. "It's one of the reasons we're talking to you today. We want to address this issue head-on. Anyone who has issues with it, I just want to sit down with them, give them the game and say: 'Try it. Play it.' It's a great game, you'll have a good time, and it's free."

PVZ2, then, is more than just a sequel that's been a long time coming: it's a game that seeks to prove that free-to-play doesn't have to be evil, and that despite being part of the supposed worst company in America, PopCap is still PopCap. Meeting both of those goals would be worth the four-year wait. ■

Q&A
Mohan Rajagopalan
Lead designer



What did you do to ensure you made a sequel, not an expansion?
It took us some time to get right. We tried a few things that just weren't feeling like they were going in the right direction. We explored changing seasons, and lawns that were much bigger. But every time we went too far we realised it wasn't feeling like *Plants Vs Zombies* any more. We needed to find a way of having the plants from the first game, but make things feel new and fresh, and that's part of how Plant Food got created. We realised if we have this ability to buff up the plants, give them fun new animations and powers, then we can have old and new at the same time.

How do you ensure you don't effectively punish those who don't pay up?
It's actually not any harder than just balancing the game as a whole. The dividing line is: what are the plants that are really essential to the progression of the game? The plants that we put in the premium store are really fun ways to change the game up that fundamentally don't change the balance so much.

Some F2P developers claim tutorials put players off. How have you handled that?
You don't want people to feel like they're in a tutorial mode. People don't want to feel like they're in school, but learning is great. And that's actually the fun of *PVZ*: the discovery, how different things work, finding new combinations you hadn't thought of before. Learning is the essential, central part of the game.

The flow of the game has changed – it's a lot more reactive. Was that deliberate?
We wanted to break people [away] from doing the exact same thing every single level, because in the first game it was really easy to fall into that trap. It's just comfortable, right? You've got something you know works, you stick to it. We wanted to put little nudges into the game to try to push players to experiment a little bit more often.

What can you say to reassure players who think of free-to-play as exploitative?
Our goal is absolutely to ensure that no matter what amount of money you're spending in *PVZ2* that you're having a really great time, and that when you do spend money on it, you feel like you got something out of it. If you don't feel that way, then we're not doing our jobs, and to players that aren't interested in spending money, I'd say don't. Don't, unless you feel like we're giving you something that you really want.



BELOW **Time-travel means PopCap's artists can have fun with the zombie designs, but whatever the era a traffic cone's still a traffic cone**

RIGHT **Mummies, pirates and cowboys are three rich sources of inspiration for the game, and the team has countless options of what to follow them with. Murray hints at months, if not years, of post-launch support**

Design showcase

How four years and three eras have changed PopCap's most characterful creations

RIGHT **The world maps are one of many nods to games of yore. The mine carts are another, while *Galaga* is also mentioned during our demo**

ABOVE **Existing plants have been redrawn from scratch; their animations have twice the frames and are more full of character than ever.**
RIGHT **Bonk Choy is the most immediately likeable of the new plants, perhaps because in the demo's absence of the first game's Chomper we were hankering after something that could do big damage at short range**



HYPE

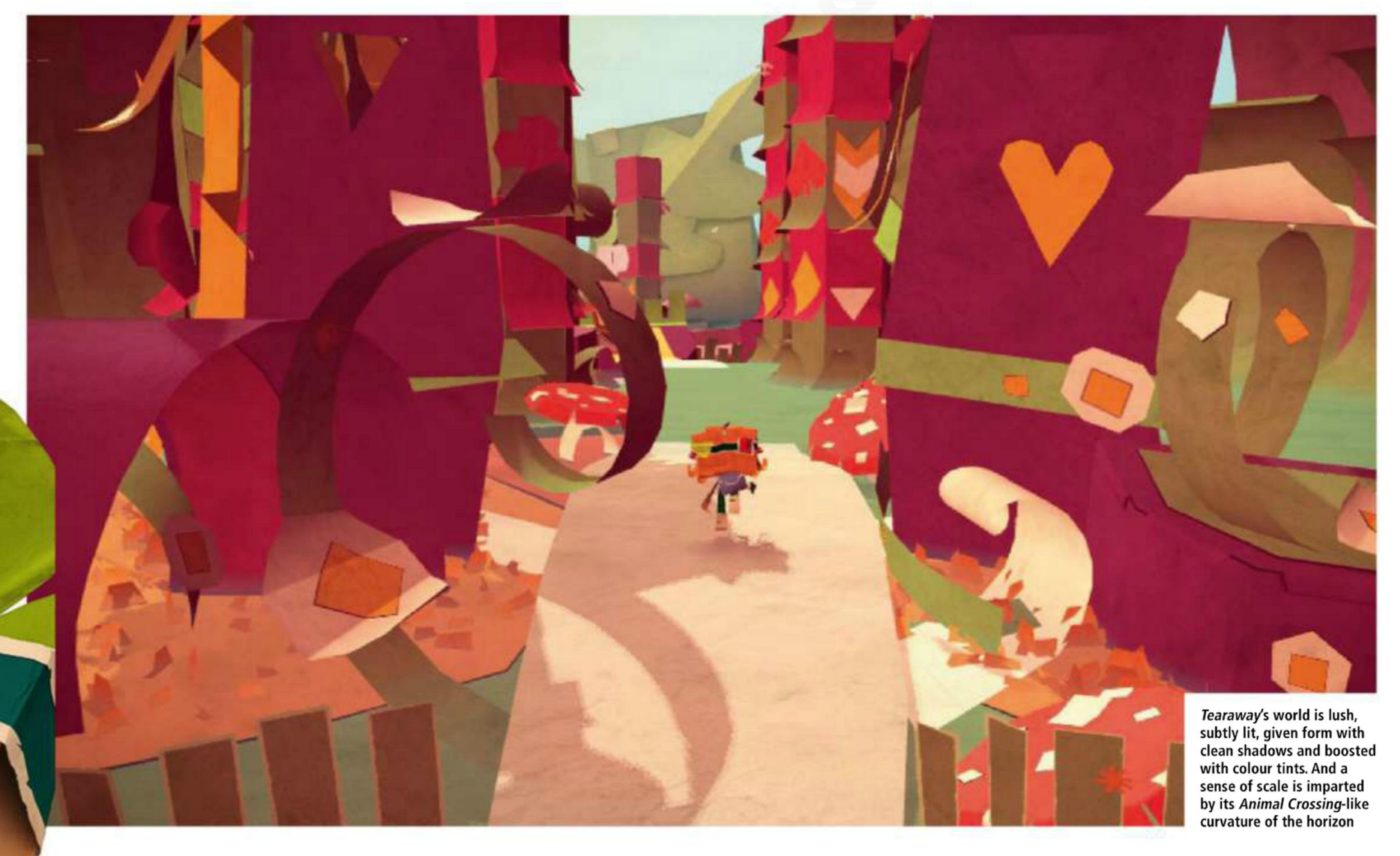
TEARAWAY

Unwrapping Media Molecule's crafty new Vita adventure

Publisher SCE
Developer Media Molecule
Format Vita
Origin UK
Release October 22 (US), 25 (EU)

Seeing it fully formed on Vita's crisp little screen, *Tearaway*'s papercraft theme seems inevitable. It taps into Media Molecule's fascination with making games based on the material world, invoking elements of arts and crafts while adding all manner of playful touches. It's an aesthetic that's bound together by illustrator and creative lead Rex Crowle's distinctive and charmingly lopsided doodle art style. The result is coherent and enveloping, despite being as varied in its inspirations as you'd expect from the studio behind *LittleBigPlanet*. There are cogs and gears and propellers, of course, but there are also nods to the wilds of America in the form of wendigos, teepees and stuffed deer. In other words, it's the kind of apparently effortless concept that in reality must be the result of weeks of deliberate iteration, random inspiration and headaches.

Despite the varied influences, *Tearaway*'s foundations are familiar. It's a 3D platformer in which you direct a tiny papery character called Atoi (or the male Iota, if you choose) along a continuous linear course. What's unusual is that Atoi's quest is to deliver a message to, well, you. Each message will apparently be unique to the player, and though this idea sounds like it's edging



Tearaway's world is lush, subtly lit, given form with clean shadows and boosted with colour tints. And a sense of scale is imparted by its *Animal Crossing*-like curvature of the horizon

dangerously close to a Molyneux-cum-*Curiosity* stunt, it's underpinned by a game that possesses shades of *Super Mario 64*. Like Nintendo's classic, *Tearaway* drops you into a world that's the product of imagination, and it's designed for you to play around in and explore without the props of explanatory text. Sure, *Mario 64*'s levels are nonlinear, but *Tearaway*'s spaces are similarly rich with interactive diversions, most of which reward you with little collectible orbs. Some areas are exploration-based, with hidden items to find, and others are based on puzzle solving and interacting with objects.

Drums covered with PlayStation symbols will sound when you tap the rear touchpad and bounce your avatar into the air. You'll stumble over a hole – more accurately, a tear – in the ground and find balls of crumpled paper nearby to try throwing into it. Flowers unfurl around you and lob you up into papery canopies. Jagged plains of grass beg to be trampled. There are rotating wheels that turn when you throw balls onto their paddles. There are monsters that snap from beneath lily-pad lures – traps ripe for leading little frog enemies into. There's a basketball hoop and a supply of balls to chuck through it; there are hollow logs that, naturally, you'll try trotting through; and there are tents with deckchairs sitting outside and strange groups of figures standing inside.

Most objects in the environment react to your presence in some way, depressing or flexing under your character's feet, and reinforcing the sense of an entire world made of paper. Concentric ripples of tears spread as you step through water, accompanied by little splashes of paper that curl into nothing as they reach the ends of their parabolas. Much of the animation has a stop-motion quality that evokes the vivid Czechoslovakian shorts that used to air on late-night TV. While your little character runs around smoothly, the paper constructs surrounding him or her spasmodically skip through their movements. Campfires are rendered with flapping triangles of red and yellow paper. The bear-like wendigos that act as antagonists in the section of the game we play flip between fierce attack cycles, puzzlement when they lose you and idle lumbering. The overall style supports a general sense of weirdness that's particularly delivered by the soundscape, which is a collage of papery rustling, quiet birdsong, woodpeckers' rhythmic knocking, as well as distant animal roars.

Flowers unfurl and lob you into papery canopies. Jagged grass begs to be trampled

Those wendigos turn out to be less antagonists than puzzle elements, your role to avoid or capture them in cages as you pass through their territories. You learn that they'll go after and devour 'pearls' (they look more like balls of paper to us), and that drawing them into areas marked with a target will see them instantly captured in a cage. But more often than not, all you can do is run away. Your health is marked by a little heart-adorned stamp, and you can only take a single hit before it swoops out, sticks onto a letter and takes you back to the nearest checkpoint. You'll welcome, then, the sight of glued sections, which allow you to run vertically up walls and out of danger as you plough on along the path.

Though *Tearaway* is as catholic in its use of Vita's varied hardware features as it is with its thematic inspirations, it happily doesn't try to shoehorn in novel interfaces where they won't fit. In fact, touchscreen and tilt



TEARAWAY



RIGHT **Tap the rear touchpad and the speaker booms, bouncing your character high into the air. It's sensitive to how hard you tap as well, with Iota or Atoi gaining greater height from a vigorous poke than they do from a gentle tap**

control is all rather incidental to *Tearaway*'s main course of platforming, which is performed on the usual sticks and face buttons. We only encounter the chance to punch our fingers through the environment with the rear touchpad twice, once to move a concertinaed bridge into position, and once in a mini-level based on punching your fingers through the floor to bash enemies around. Hit them accurately and they'll fly up and stick onto the camera lens, requiring a prod from the front to remove. In terms of touch control, it's worth noting that the force of your taps is occasionally important – those Atoi/Iota-launching drums react to how hard you hit the rear touchpad – and that you'll manipulate some objects with the front touchscreen, too.

Vita's accelerometers, meanwhile, are used for a mini-level in which you roll a ball by tilting the handheld while simultaneously controlling the character on the sticks, each hitting switches to aid the other's progress. They're also used to aim your character's camera when taking in-game pictures. The results, incidentally, are rendered with a delightful depth-of-field effect and vignetting that brings to mind Instagram filters.

The rear camera rounds out the set of Vita-enabled tricks, providing a feed that's visible when you punch your fingers through the level as if you're seeing right through the handheld. Media Molecule seems to follow the line that traditional play is best served by traditional controls, and that novel approaches are often best enabled by unusual inputs.

All these little features lend the game the same overall air of restless creativity, cheery self-indulgence and generosity that marked out *LittleBigPlanet*, but it's also happy to integrate tried-and-tested ideas. Yet another mini-level features an accordion that can suck and blow air (visualised with a multicoloured cloud of confetti) in a manner that recalls *Half-Life 2*'s Gravity Gun, operating objects such as propellers that turn platforms around, and dispatching enemies by drawing them in and shooting them away, or firing balls.

For those who were put off by the mushy feel of *LittleBigPlanet*'s controls, *Tearaway*'s are far tighter, which suits its host genre and should diminish frustration



Aside from some rough edges in our exclusive early demo code, such as the lead character's habit of catching slightly on bits of environment and an occasionally wayward camera, *Tearaway* is looking like it's on course to be as polished and essential to Vita as *LBP* was to PS3. The next question is whether the rest of the game can sustain the level of invention and sense of wonder that's evident in the segments we've played. If it can, we could have a modern classic on our hands.

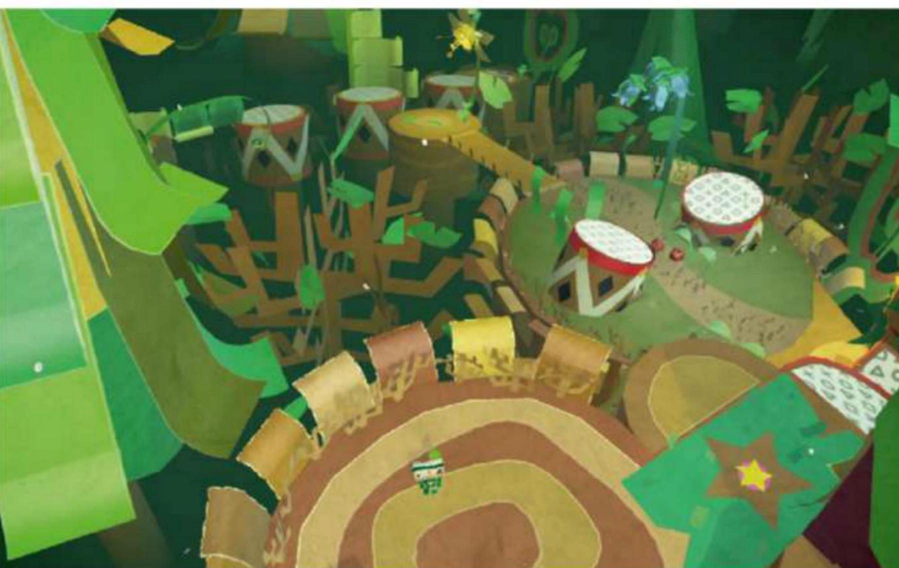


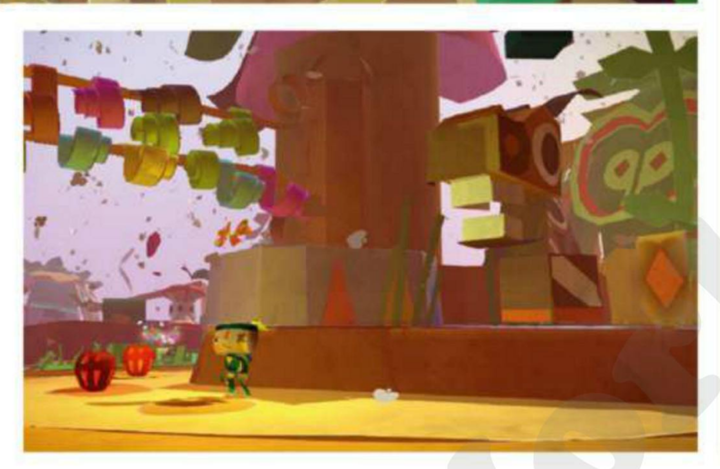
Facepaint

Tearaway's characters are highly customisable, modified via a tidy touchscreen-based interface with which you can add decals to any part of their bodies. Want to see their backpacks covered in blinking eyes? No problem. It's surprisingly easy to make faces as charmingly askew as those that appear on the game's cover, too, which is more a testament to Media Molecule's skill at creating art assets than our compositional abilities. You can also take coloured sheets of paper, cut them out by pushing scissors through them with your finger and collage the pieces together to form new textures to dress elements in the game world.



Wendigo arms sometimes erupt from walls and reach for you as you run past, while in other areas they throw rocks and chase after you. We suspect they'll only star in a short section of the final game, however





ABOVE **Hold the jump button and your character folds up into a ball and rolls around. It's ideal for getting through small spaces, and your new-found nimbleness is also ideal for avoiding enemies.** RIGHT **The world has a constant sense of movement, a result of confetti-like shapes floating through the air as well as the subtle soundscape of natural animal calls and papery crumpling and swishing**





Q&A
Rex Crowle
Creative lead, Media Molecule

How did the game's look come about?
Our initial desire was to create something using the rear touchpad. I had this excitement about pushing your fingers into a videogame and seeing them there for the first time ever. We tried a load of concepts, putting a lot of artwork down on paper, printing things out and going through all the usual procedures. But we didn't feel like it was all really coming together until we'd got so many concepts all piled up that we realised that the material we were printing these out on was potentially the right match. We were starting to see all these undulating landscapes appearing on our desks, teetering and falling over, blowing around. It started to look like a very interesting world to explore, and also shake around and have a dramatic effect on. Getting more embedded with paper and exploring its creative and constructive properties gave us a nice core concept to build all our other crazy ideas into.

What role does the in-game camera play?
As you're going around, you're using the camera to discover things, which can then be taken outside of the game. You have a little papercraft collection you carry with you, which you can actually get very game-y about trying to fill in. But then we can give it an extra twist: it's not just finding treasures that you can rotate with the right stick; you're able to print out and construct them, and show off these physical trophies as you're progressing.

You seem happy breaking the fourth wall.
Yeah, we use it in different ways. The number one way of breaking the fourth wall is tearing through the game world, and there are some key plot points about the fact that you can see parts of your environment inside of the game world. We did some quite crazy experiments with puzzle solving that required unusual mechanics like using the camera to detect whether you had a beard or glasses, and it would only unlock certain things if you did. I'm not sure how you would suddenly grow a beard… but I think it shows the playfulness we're trying to achieve with this real-world/game-world intersection.

There's a natural social element to *Tearaway*, in that you're taking photos, printing things out and showing people, but is there any traditional multiplayer?
No, we're just going singleplayer so we can really concentrate on the adventure and making that interesting buddy movie bonding story between you as a character outside the game world and your little messenger inside the game world.



The Bureau's promotional art and trailers put an emphasis on covering up the truth. Does that mean missions to erase evidence? Senior producer Nico Bihary explains: "It's mainly a thematic element, but there are also portions of it that will go into the narrative"

H|Y
P|E

THE BUREAU: XCOM DECLASSIFIED

2K's twice-expunged XCOM shooter is finally ready to go public

Publisher	2K Games
Developer	In-house (Marin)
Format	360, PC, PS3
Origin	US, Australia
Release	August 20



The items of blue neckwear these Sectoids are sporting are slave collars. They're the Zudjari's means of subjugating the *XCOM* series' roster of alien faces, and provide a narrative reason to stitch classic foes into an invasion that takes place long before the 2012 reboot's near-future conflict

The year is 1962, and the atmosphere is one of fear and suspicion. President John F Kennedy is in the White House, tensions with the Russians aren't easing, and the world is teetering on the brink of war.

The year is 2013, and the atmosphere is one of fear and suspicion. *The Bureau: XCOM Declassified*, née *XCOM*, has now officially resurfaced for the third time, having shifted from firstperson perspective to third. Can an apparently troubled squad shooter, especially one set in the icy heart of the Cold War, really capture *XCOM*'s essence?

To investigate this, we must travel to the Pima, New Mexico, of 1962, where protagonist William Carter's three-man squad of Bureau operatives is walking up the archetypal small-town high street. Something's not right: the road is littered with abandoned automobiles. We're here to search for a dapper operative named DaSilva, and it's not long before a clue presents itself. Slumped against one burnt-out wreck is an ashen-skinned alien encased in a Borg-like suit of armour. "DaSilva was here," growls Carter in a 20-a-day rasp. As the agents pick their way through the car-strewn streets with all the moves and grace of Marcus Fenix's band of misfits, three aliens step into the road. Two are instantly familiar: Sectoids, the little grey men that startled thousands in 2012's *XCOM: Enemy Unknown*. But both are in thrall to the third, a Zudjari (AKA an Outsider), the kin of the silver-armoured corpse on the car.

That's when Carter enters Battle Focus mode with a press of B on our 360 pad, and things begin to feel more like *XCOM*. Time slows and a wheel of icons appears, split into three segments, one for each agent. While this evokes *Mass Effect*'s biotics menu at first glance, select a supporting agent and the Move command and it's *Enemy Unknown*'s blue shield that denotes when we hover near suitable cover. Likewise, familiar percentages dress the target selection option. Once commands have been doled out, we revert to over-the-shoulder view and watch our agents – a Commando and an Engineer – make short work of the Sectoids while we run around to flank the Outsider. Two pulls of our laser shotgun's trigger later, he lies dead.

This emphasis on controlling tactical space persists throughout our demo. The dangers of being out of cover and need to play for the right angles to root out the aliens manages to recall a condensed version of *XCOM*'s turn-based matches played out in spurts of realtime. The action is frenetic, yet a tap of B provides the mental manoeuvring room to direct your squad and deploy their powers to best effect.







RIGHT **There's a brief window for you to give the order to revive downed teammates, otherwise you can kiss them goodbye forever. If Carter dies, however, then it's game over.**
BELOW RIGHT **The weapon progression is familiar, with your arsenal moving from conventional firearms to laser and plasma guns. But we're told there's also a secret final tier beyond the usual suspects**



And what powers. The mission we play falls early in the game, but already our Engineer can lay down mines and turrets to augment our firepower, while our Commando can taunt enemies to draw them into the open or knock them out of cover with a powerful shockwave. Carter, meanwhile, is responsible for squad healing and has a power called Lift, which can dangle even hulking Mutons in the open air to be cut to shreds. Chaining them together proves still more effective. Why run out of cover to hit stubbornly entrenched enemies when you can Lift a turret over their heads to rain down death from above?

It's not long, however, before our enemies make their own power felt, cutting down a squadmate on our left flank. And here, again, is *XCOM*'s DNA: leave the soldier too long without reviving him and he's gone forever, taking his experience and powers with him. Not to worry, you can craft his replacement yourself at mid-mission loadout-tweaking points, or back at the Cape Canaveral-like base we long to poke around. Joining the Engineer and Commando are Recon (read: sniper) and combat-stimulant-chugging Support agents, whose training and background you can select for passive boots. To make up the experience deficit, 2K tells us that as well as story missions and optional ones, there are Dispatch quests you can pack underlings off on to level up, with no danger of them snuffing it when out of your sight.

Rookie in tow, we catch up with DaSilva, who's been playing the role of guerrilla solider and planting bombs around the town. He's also contracted an alien illness, a plague that's turned most of the residents into passive vegetables (see 'Disc o' fever'). In an awkward exchange, via a circa-2010 conversation wheel, he tells us he's going out with a bang, and points us towards an alien base beneath the city. This is by far the low point of our demo, with Carter's drawled platitudes grating and DaSilva's sacrifice ringing hollow. 2K will need to draw the human impact of the invasion better than this if the story isn't to detract from the game as a whole.

There's a slightly out-of-time quality to what we've seen of *The Bureau*, and it goes further than the '60s setting, coming off like a melting pot of this decade's biggest-name games. But *XCOM: Enemy Unknown* showed the power of polishing familiar mechanics to a 2013 sheen, and first contact with *The Bureau* suggests the shooter reboot no one wanted may have transformed into the tactical yet action-packed spin-off no one expected. ■





Disc o' fever

The Bureau's story is mostly under wraps, but we do know that the extraterrestrial infection Pima's residents have contracted, which manifests itself in ink-like gloop that runs from facial orifices, is not accidental. Rather, it's a pre-invasion gambit by the Outsiders to soften up our race, leaving the populous unable to focus, or even turning them into sleeper agents. It will play a role in the wider arc, too, with players able to affect the infected's fate. Carter's development occupies another story thread. He's an alcoholic who's seen too much already, and will have to deal with a lot more before his mission is through.



The abstract alien rings that marked the 2011 reveal have seemingly vanished, but drones are back. Since *The Bureau* is all about taking and negating cover, you can expect floating enemies to be tactically troublesome





ABOVE **Battle Focus mode turns the screen night-vision green and picks out enemies as if via heat signature. Aim commands offer damage percentages, too, but they're not quite the same tactical life-or-death consideration they are in *Enemy Unknown*.** RIGHT **This parade highlights the tonal shift *The Bureau* has undergone since 2011. Gone are the military troops and backup; now you're the first, last, and only line of defence against the worst scum in the universe**

Q&A
Nico Bihary
Senior producer, 2K Games



***The Bureau* has evolved a couple of times. What's brought you to this version?**
There really isn't all that much that's really changed in terms of the pillars of our game… I think where [players] were curious was in the transition from the firstperson perspective, which we demonstrated in 2011, to now, which is a full-time thirdperson perspective. If you look back at the footage from 2011, as you're going [about] in this firstperson sort of exploratory experience, you'll engage in combat. And when you engage in combat, it actually pulls into a thirdperson perspective. There's a UI that overlays that, which looks very similar to the Battle Focus we have today, except it was called Tac mode. Not as elegant, in my opinion. As we were playing, as we were exploring this gameplay mechanic, it became clear this was going to be one of the shiny objects, one of the real standout pillars of this game. So we were like, 'Why don't we just get into thirdperson perspective as quickly as possible?'

You've moved to 1962 as a setting, which was an eventful year in world politics. What are you drawing from that time?
It's really fertile soil in terms of the reasoning as to why a Bureau would exist. There are certain periods of time where it's like, 'Why would they have an agency that's concerned with [external threats]? We were living so high on the hog, there was nothing to worry about. It doesn't make sense that this agency would exist.' Clearly with the geopolitical tensions of the time, it is not outside the realm of possibility that there were clandestine organisations all over the place, with the pure goal of gathering intelligence, meeting threats head-on, and covering up their existence to the best of their ability… If anyone was going to become XCOM, it's these kinds of people.

What did you learn from Firaxis and the success of *Enemy Unknown*?
Enemy Unknown did a great job of communicating to the player what [its] icons, what [its] language meant. And so we were like, 'Why reeducate the player. Why reinvent the wheel? That is perfect, it works within the game – awesome.' The other is just the pantheon of enemies within the game, whether it's Sectopods, Sectoids, Mutons – there's already a rich roster… And then permadeath, obviously, is a huge component. And then just little things: the player progression, the value of customisation, and the value of allowing the player some autonomy when it comes to their loadouts and the way that they assemble a squad.



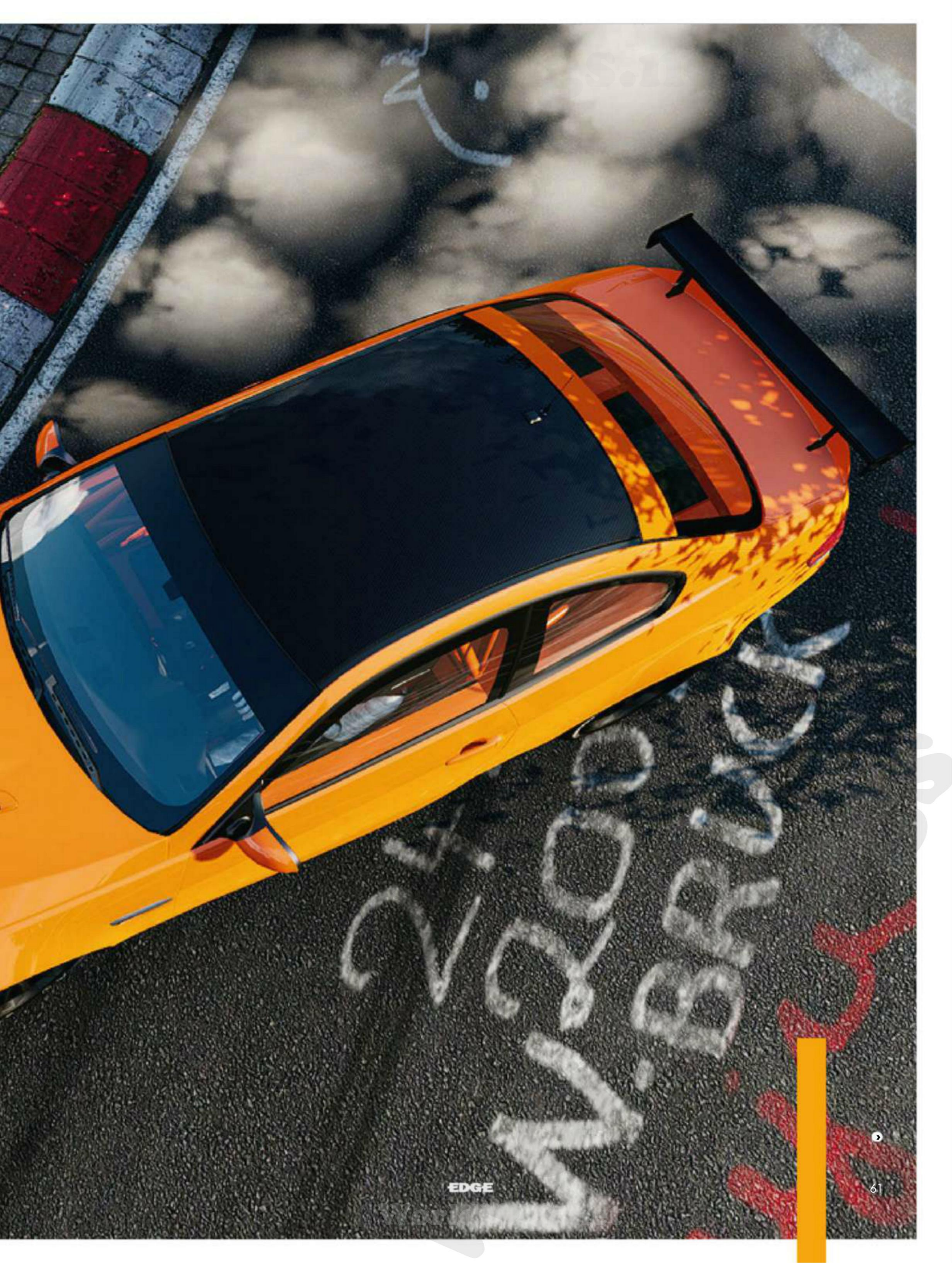
The range of vehicles gives *Project Cars* a stake in just about every motorsport. F1, NASCAR and Formula Ford races will be available from day one, and rally racing will be made available as downloadable content

HYPE

PROJECT CARS

The racer for everyone, made by everyone

Publisher	Slightly Mad Studios
Developer	In-house
Format	360, PC, PS3, Wii U
Origin	UK
Release	2014







RIGHT **Bullshots abound in the world of racing games, but every shot of *Project Cars* featured here has been taken with the in-game camera by its community members**

Just €25,000 will buy you a senior manager's position in Slightly Mad's World Of Mass Development, plus a couple of advertising hoardings and liveries, and access to a patching schedule that alters the makeup of *Project Cars* daily. With 80,000 backers investing anything from €10 to €25,000 for access to early builds of *Project Cars*, the studio now has an army of QA testers and advocates, and their influence is shaping a game that already does things *Gran Turismo* and *Forza Motorsport* never have.

Long before Double Fine's Kickstarter-altering success with *Broken Age*, Slightly Mad built its own portal – its World Of Mass Development, or WMD – and gave every backer access to development builds as well as a line to the studio through its forums. When *Project Cars'* new physics model was patched in several months ago, universal community approval convinced the team within hours that it was on the right track. When one backer said a certain car's bumper might be too angular, the error was fixed the next day. "With WMD, we don't have to develop in the dark for two years and hope our decisions pan out," says creative director **Andy Tudor**. "We come from the mod scene, where people go onto forums and talk, so we wanted to have that two-way communication with players."



Forza **has long had a rule about open-wheeled sports cars – supposedly because of the difficulty of modelling airflow over moving wheels – but Slightly Mad has no such qualms, putting pressure on Turn 10 to diversify**

Taking so much feedback from so many is Slightly Mad's way of building a sim racer that does everything for everyone. Already it has made enough cars and tracks to cover karting events, road racing, touring car, oval racing and Formula One. When the game is finished, those fragments will be stitched together into a career calendar you can explore as you please, whether that's taking the usual zero-to-hero route from Mini Cooper to Bugatti Veyron, or racing three years of F1 seasons in the same car. Along the way, you'll drive in rain and snow on tracks with full day/night cycles, compete in 64-player races online, and challenge friends through a version of the Autolog-style system Slightly Mad helped create for *Shift 2: Unleashed*.

"We're going to provide you with all the tools and all the options you need to dial it into whatever kind of experience you want and whatever motorsport you're into," says Tudor. "You can make it more like *Need For Speed* if you want, or a full sim. Everyone complained our AI was too aggressive, so we opened up all our AI sliders so you can tune it how you like. This is the players' game. We're building a sandbox, and all those settings and options will make it into every version, not just PC."



Funding drive

Project Cars' crowd-funding model makes investors out of its backers. Slightly Mad will retain 30 per cent of any profits, with the remainder split among those who helped fund the game's development. When combined with the active role members take in guiding development, WMD's setup is quite different to the likes of Kickstarter. UK regulator the Financial Services Authority asked Slightly Mad to stop accepting contributions in late December while it investigated, but soon gave the all-clear, only asking the studio to make clear to its members that they were entitled to full refunds right up until the game ships.





Gran Turismo 6 has more than 20 times the vehicle count of *Project Cars*, and the numbers game is vital for racers. But this is a platform to build on, even if it can't compete with *Forza* and *GT*'s lead from the beginning

Those settings are the selling point that should help the game spread beyond its committed players-cum-investors. If you want the game to feel like *OutRun*, we're told, it will. Handling models, opponent AI and steering are all highly customisable, with single settings to make sweeping changes, and more in-depth toggles and sliders buried deeper in the game's litany of menu screens.

The games to beat are *Gran Turismo* and *Forza*, Tudor believes, and *Project Cars'* pitch is a list of features ripped from both with a promise to better them, plus its own innovations. It's only the car count where Polyphony and Turn 10 take the lead, with *GT*'s endless Nissans and *Forza*'s boutique supercars outnumbering *Project Cars'* roster a dozen times over. But in every other respect, *Project Cars* is ready to challenge the format-exclusive racers. Its physics system is flexible enough to handle everything from a go kart to an F1 car, weather and daylight dramatically impact racing, and it covers more motorsports than *Forza*, despite having fewer vehicles.

Slightly Mad has Wii U and PC all to itself, since specialist racers tend to focus on one form of motorsport, but on PS3 and 360 the game's greatest strength is as a force for change. *Forza* can't afford to ignore F1 or dynamic weather in a space it will share with *Project Cars*, and *Gran Turismo*'s ancient AI routines seem half asleep compared to *Project Cars'* murderous automotive bullies. And then there's the promise of team management, pit stops as dynamic as the real thing, and that unprecedented connection with the community. Succeed or fail, Slightly Mad's crowdfunding experiment looks set to shake up a genre Turn 10 and Polyphony have developed conservatively for a decade. ■



Q&A
Andy Tudor
Creative director, Slightly Mad Studios



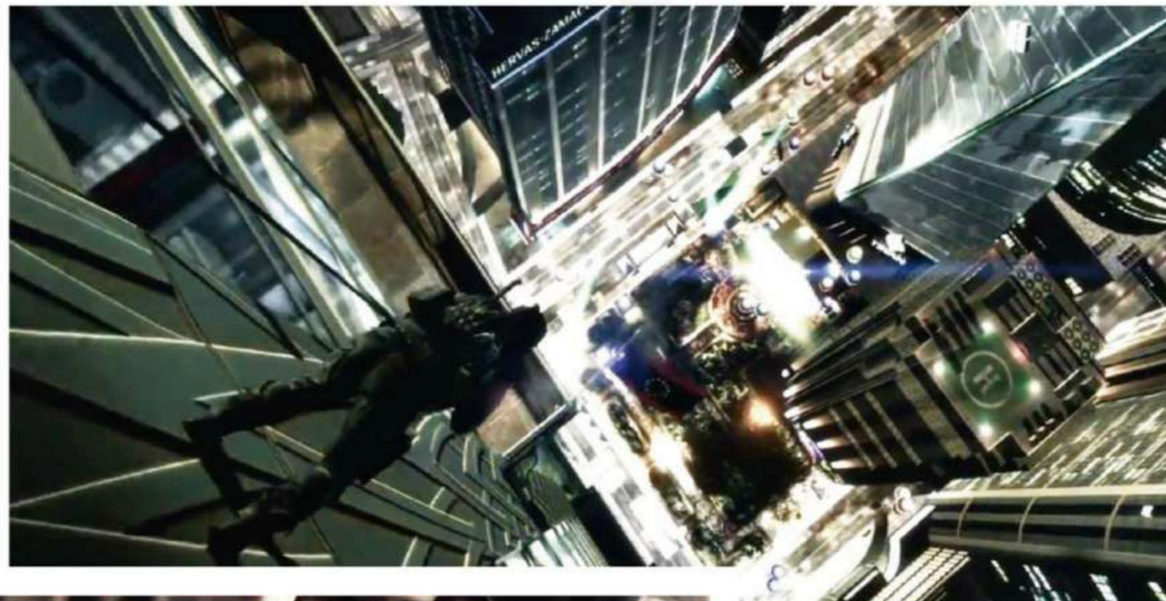
After working with EA and Atari, why did publisher support vanish for *Project Cars*?
We had a lot of enthusiasm from publishers, but a racing game has a lot of costs. You need all the licences for the cars, manufacturers, teams and drivers, tracks, the agreement of the owners of the tracks… It's a lot of management. And you see the passion people have for *Forza* and *Gran Turismo*, and if you're a publisher you wonder, 'Are we really gonna cut into that audience?' But we believe we can, especially on Wii U and PC, where there's a space to fill.

Has licensing been more difficult without publisher support?
All the money for licences was included in the funding we've already got, and we already have those relationships with manufacturers. We worked closely with Pagani before they debuted the Huayra, and *Shift* was the first game to have that car in. They were so happy with the result that they remembered us when we came to them with *Project Cars*, and that's why we have the Huayra. On the other hand, BAC came to us and said, 'We've got this cool car. We want people to know about it. We like what you do – can you put the Mono in *Project Cars*?' And we have.

How have your handling systems changed since *Shift* and *Ferrari Racing Legends*?
The handling and force feedback have been completely changed with a brand-new physics model, which is something we've wanted to do for a while. Our tyre model has been changed in lots of technical ways – we have soft spots on the tyres now, for instance – and our force feedback is an improvement of what we had in *Ferrari Racing Legends*, so we keep expanding how wheels work.

Is there any room left to innovate in the sim racing genre?
Every racing game we make, we have two columns: one with features we want to do better than everyone else, and the other with innovations that have never been done, or have been done in other genres. I like games where things scare the shit out of you, and that inspired our take on night racing in *Shift 2*. Night racing should be scary, so we didn't put giant yellow arrows on every corner. Night racing isn't innovative, but the way we did it was. I think the equivalent of that in *Project Cars* is pit stops. Usually you enter the pit lane, let the computer take over and crawl into the pit – it's nothing like real life where it's really tense and dynamic. I think there's room to make pit stops really visceral.

RIGHT **It's hard to reconcile Volker's claim that the United States is physically as well as psychologically ruined with *Ghost*'s glittering shards and its high-octane stunts.**
BELOW **Dogs have featured in *COD* before: they're a killstreak reward in the *Black Ops* games. But this one will be a squadmate, and has been extensively motion captured from a real Navy SEAL dog**



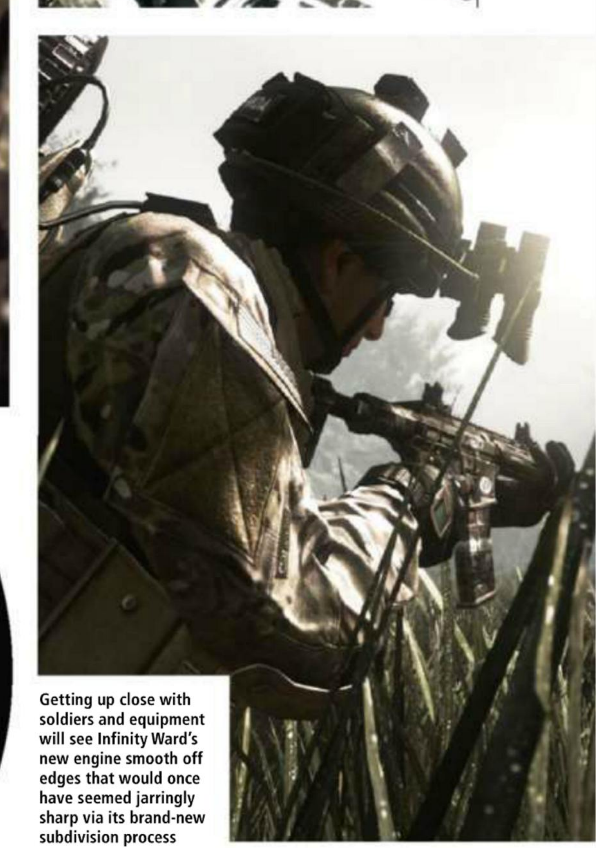


HYPE

CALL OF DUTY: GHOSTS

Can a new engine help Infinity Ward leave Modern Warfare behind?

Publisher Activision
Developer Infinity Ward
Format 360, PC, PS3, PS4, Xbox One
Origin US
Release November 5



Getting up close with soldiers and equipment will see Infinity Ward's new engine smooth off edges that would once have seemed jarringly sharp via its brand-new subdivision process

Customisable multiplayer characters are another series first. It seems odd they've been such a long time coming, given the flexibility of the Create A Class system

Compared to next-gen showcases such as Konami's Fox Engine, the tech driving *Call Of Duty*'s future is more modest. Infinity Ward admits that *Call Of Duty: Ghosts* will run on the old engine, but overhauled to such an extent that it's calling it a new one.

"It's a fine line when you define a new engine and augmentations to an engine," says animation lead **Zach Volker**. "As we develop and we add features, at what point does it become a new engine? Because it's impossible to develop a new engine from the ground up in a two-year cycle. You would need an army of 200 engineers. So we say, 'OK, what are the things that are significant... Are those being upgraded in a significant way? All right, then, we've got a new engine on our hands.'"

The results are pretty, even if new *COD* looks a lot like old *COD* on a high-end PC. *Ghosts* might not have the visual impact of games using the new engines shown off by Square Enix and Konami, but it looks like something you could play in your living room today, rather than several years from now.

New features include displacement mapping, which banishes flat textures by creating 3D geometry from images. The results are striking: images of rocks become 3D at the press of a button. That it's rendered in-engine and on the fly will help those yearly iterations. Then there's 'sub-D', a rendering technique that raises poly counts to maintain visual integrity in close-ups.

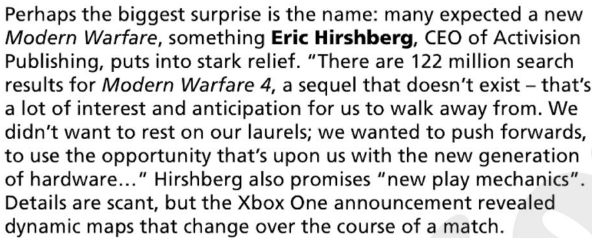
The new lighting engine packs in high-dynamic-range rendering and subsurface scattering, the latter giving your avatar's skin a subtle translucency; veins appear to show through rather than looking as if they've been painted on. *Ghost*'s assets won't be the limiting factor for its visual fidelity either, having been made at "cinema quality". Rather it will be the extent to which they must be scaled down to suit this revamped engine.

Where these new tricks really pay off are in the environments. A jungle bursts with dense vegetation, the steamy air dappled by the light beams breaking through the canopy above. An underwater scene looks more like a wildlife documentary, with a forest of seaweed and schools of fish. It's not incredible, but credible, and current-gen visual sleights of hand are nowhere to be seen. Vegetation looks dense simply because there are lots of plants.

The biggest revolution is not in technology, but tone. Despite executive producer **Mark Rubin**'s claims that next gen offers "a unique opportunity to reinvent *Call Of Duty*", this looks a lot like another *COD* in action. The real change lies in the plot, written by Stephen Gaghan, the writer and director whose script for Traffic won him an Oscar. In the future, the US is ruined, crippled by a mysterious cataclysmic event. The heroes – only the player and his brother have been mentioned so far by Volker – have grown up in this world. "It's changed America, both from a physical and emotional perspective," he explains. "Physically, it's gone through a lot of battles, there's been a lot of destruction and a lot of ground has been lost. From an emotional standpoint, America is beaten down, its ego is hit and hurt, our back's against the wall, and things don't look good."

Given *Call Of Duty*'s traditional jingoistic zeal, the idea of a no-longer-dominant US could be a bigger shake-up than any flashy coding or HD textures. Yet improvements to engine and story alone won't be enough to reinvent a series whose core gameplay is starting to show its age. Some new ideas will be essential if Infinity Ward is to deliver the reinvention Rubin has in his sights. ■





Modem Warfare

Perhaps the biggest surprise is the name: many expected a new *Modern Warfare*, something **Eric Hirshberg**, CEO of Activision Publishing, puts into stark relief. "There are 122 million search results for *Modern Warfare 4*, a sequel that doesn't exist – that's a lot of interest and anticipation for us to walk away from. We didn't want to rest on our laurels; we wanted to push forwards, to use the opportunity that's upon us with the new generation of hardware..." Hirshberg also promises "new play mechanics". Details are scant, but the Xbox One announcement revealed dynamic maps that change over the course of a match.

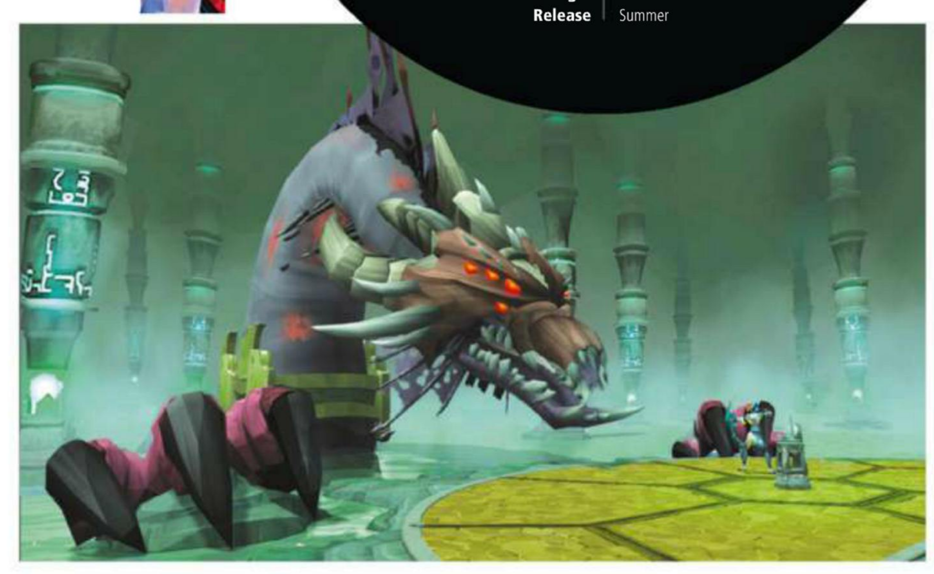




RUNESCAPE 3

The Sixth Age leaves RuneScape's future up to its players

Publisher	Jagex
Developer	In-house
Format	PC
Origin	UK
Release	Summer





RuneScape 3 **gives players great power and great responsibility. It's possible for a player to become more powerful than the gods, but Jagex won't be drawn on the consequences of this**

ABOVE **HTML5's ability to stream CD-quality music has been put to good use by the game's sound directors, with orchestral music signifying which deity owns a region.** RIGHT **Enhanced camera controls let you soak in Gielinor's brilliant blue sky for the first time, instead of restricting you to an isometric view**



Over two games and 12 years, Jagex's *RuneScape* has carved out a legend for itself. It is the original free-to-play western MMOG, having amassed 200 million registered users over its lifetime. And as competitors flood into its space, it's the one with an established niche and community.

After over a decade of iteration, though, *RuneScape 3* sees Jagex deliberately upsetting the balance. The game's Sixth Age has a grand overarching narrative that begins with the God Of Balance, Guthix, being slain at the hands of Sliske. The protective wards surrounding the realm vanish, allowing gods of varying malevolence to swoop in and claim Gielinor's regions as their own. It is against this backdrop that *RuneScape*'s players are being handed the power to decide the fate of the world around them. They will pick sides and fight on behalf of their deity in World Events, which will be spaced three months apart. And these events will have a dramatic effect on the game world: familiar regions could be turned inside out, depending on which god finally wrests control of them.

Isn't there a chance this could also upset the game's dedicated fanbase, a passionate audience of millions of monthly active users? Design director **Mark Ogilvie** admits that there is, but believes it's counterbalanced by the fact that players will have the agency to decide what happens for themselves. The degree of power that we're getting should not be underestimated; when we quiz Ogilvie on what *RuneScape*'s landscape might look like in a year, he replies, "We honestly have no idea." Yet the Jagex team clearly doesn't fear controversy – the first event is scheduled for this summer, and will take place in an area we're told is close to players' hearts.

The main catalyst behind *RuneScape*'s growth has been the ubiquity of its web browser host, enabling the game to grow from a hobbyist multiuser dungeon running out of a UK bedroom to a global juggernaut. But while the client opens up the game to a huge audience, it also holds *RuneScape* back, leaving it unable to keep pace graphically with its peers. And this is why the second of *RuneScape 3*'s overhauls is a technical one.



Better lighting and draw distances are two of the benefits of the move to HTML5, although the beta can't quite match triple-A standards

Ogilvie tells us that the forthcoming switch from Java to HTML5 will "turn the perception of browser gaming on its head" and enable *RuneScape* to provide an experience capable of rivalling triple-A games.

Players are being handed the power to decide the fate of the world around them

The beta falls short of those grand claims – not least because Jagex's commitment to backwards compatibility means *RuneScape* is still tethered to its past, with a Java client supplied for browsers incapable of handling HTML5 – but the shift has enabled the team to greatly improve the draw distance of Gielinor's vistas and reduce loading times down to miniscule waits. The music and soundscape also benefit from the change, with the ability to stream CD-quality audio finally sounding the death knell for the series' workhorse MIDI files.

Still, *RuneScape 3*'s most exciting changes are idealistic rather than material. Jagex has aspired to democracy since day one, but it was only when the team implemented sweeping changes to the Wilderness region in 2007 – removing player killing in an attempt to curb traders – that it learned the folly of working against its fanbase instead of alongside it.

The in-game protests that ensued created a divide between fans and studio, but Jagex used what it had learned to repair the fracture, allowing players to vote on rule changes and striving for transparency in its policies. That player-first ethos has continued; for instance, September saw the opening of Botany Bay, an island where players can vote on punishments for accounts suspected of being bots.

RuneScape 3's cataclysmic tale takes player involvement to a new levels, while also providing a lasting focus in a world that, due to its episodic method of delivery, has become overrun with disparate storylines. It provides the framework for players to etch their names in the annuls of their server's history as well, giving rise to legends that will be passed down to the *RuneScape*s to come. And, at heart, community is what *RuneScape* is really about – not lengthy draw distances or triple-A visuals.



Tear and share alike

Rather than design a one-size-fits-all solution for *RuneScape 3*'s user interface, Jagex has invested a great deal of effort in creating a fully customisable UI that puts players in full control of their setup. Described by Ogilvie as a "tear and share" system, *RuneScape 3*'s UI enables you to tab, reshape, pull apart, merge and dock the game's various menus as you see fit. And once you've designed an interface that suits your playstyle, you can share the settings with your friends. But Jagex understands that not every player desires this much power, and has included a RuneScape Classic interface among the presets, too.







GRAN TURISMO 6

Publisher SCE **Developer** Polyphony Digital **Format** PS3 **Origin** Japan **Release** November



To celebrate *Gran Turismo*'s 15th anniversary earlier this year, Polyphony announced the sixth outing for the "real driving simulator". And as is customary for *GT* announcements, it's all about the numbers. *GT6* will feature 1,200 cars at launch, and seven new locations – including Silverstone and Bathurst – bringing the total up to 33. Within those there will be 71 layouts (19 of which are new). If that's not enough, the new course designer should sate your appetite. And you'll be able to fit more races into your life, thanks to a redesigned UI and faster loading times.

THE FOREST

Publisher SKS Games **Developer** In-house **Format** PC **Origin** Canada **Release** TBA



A firstperson survival horror, *The Forest* casts you as the lone survivor of a plane crash. You must explore a living forest by day, foraging and building a shelter. At night, you must deal with a community of albino cannibalistic mutants – reminiscent of the creatures in Neil Marshall's horror movie, The Descent – which dwell in the vast network of caves below, either cowering in the shadows or fighting back with crude weapons.

PUTTY SQUAD

Publisher System 3 **Developer** In-house **Format** 360, 3DS, PC, PS3, Vita, Wii U **Origin** UK **Release** Summer



Putty Squad was released as a SNES title, but only as a demo on PC and Amiga. Now, 20 years on, System 3 is finishing what it started by releasing it on just about everything else. The new version features a visual makeover and more puzzles, but it can't help feeling clunky in a post-*Super Meat Boy* era.

MEMORY OF A BROKEN DIMENSION

Publisher XRA **Developer** In-house **Format** 360 **Origin** US **Release** Winter



If you didn't grow up booting PC games from DOS, you may struggle to progress past the opening section of XRA's spooky prototype. If you do manage to hack into the degrading OS, however, what awaits you is a confusing monochrome firstperson world of visual artifacts and interference.

BATMAN: ARKHAM ORIGINS

Publisher Warner Bros Interactive **Developer** In-house (Montreal **Format** 360, PC, PS3, Wii U **Origin** Canada **Release** October 25



Rockstead is handing over the reins to Warner Bros' Montreal studio for the latest Batman. It stars a "young, unrefined" lead and takes its lore from the Legends Of The Dark Knight comics. Set in Gotham City on Christmas Eve, the game pits players against assassins, including Deathstroke.

GUNPOINT

Publisher Tom Francis **Developer** In-house **Format** PC **Origin** UK **Release** TBA



Francis's espionage puzzler is now coming to Steam, and a new trailer shows off a selection of gadgets: the Hushcracker will allow you to break windows silently, the Prankspasm lets you route power through another device, while the Longshot allows you to hook up switches to enemies' guns.

AMONG THE SLEEP

Publisher Krillbite Studio **Developer** In-house **Format** PC **Origin** Norway **Release** Winter



Cast as an infant, you waddle and crawl your way through puzzles while avoiding a mysterious supernatural figure in Krillbite Studio's game. The atmosphere is oppressive and creepy, but much of the horror comes from the precarious situations in which you're forced to place a child.

PAPERS, PLEASE

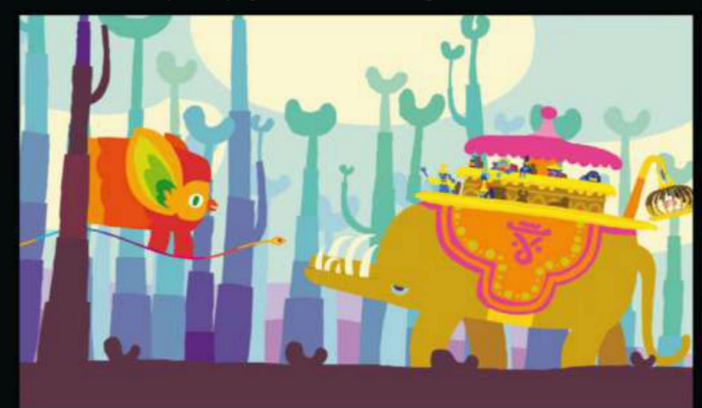
Publisher Lucas Pope **Developer** In-house **Format** PC **Origin** Japan **Release** TBA



The creator of *Helsing's Fire* has turned his attention to the fictional Cold War-era nation of Arstotzka. You take on the role of an immigration inspector, trying to earn money to feed your family by checking as many hopeful immigrants' passports as possible without letting in ne'er-do-wells.

HOHOKUM

Publisher SCE **Developer** Honeyslug **Format** PS3, PS4, Vita **Origin** UK, US **Release** TBA



Honeyslug, the UK developer behind antagonistic Vita minigame collection *Frobisher Says*, is working with Sony's Santa Monica Studio for its next effort, *Hohokum*. You control The Long Mover, a multicoloured flying snake, as you travel through a surreal landscape interacting with its inhabitants. There's a distinct *Noby Noby Boy* flavour to proceedings, with designer Ricky Haggett explaining that he wants to evoke the feeling of doodling in the air with a kite.

BATTLEFIELD 4

Publisher EA **Developer** DICE **Format** 360, PC, PS3, PS4, Xbox One **Origin** Sweden **Release** Q4



The first footage of *Battlefield 4* not only raised the bar for the graphical fidelity of musty concrete corridors, but also for in-game music, accompanied as it was by Bonnie Tyler's Total Eclipse Of The Heart. Frostbite 2's credentials certainly aren't in question, as cloth billows in the wind, dust whips across the ground and the fiercest explosions we've yet seen tear through destructible environments, but there's little evidence of any fresh ideas in the setpiece-heavy gameplay. In the technical battlefield of firstperson shooters, then, *BF4* is undeniably well armed, but it still has much to prove.



Steven Bonnell II, rendered here by artist Lasse Martin Jakobsen, is a livestreaming pioneer. You can watch him play at www.destiny.gg

Check me out

The new world of 24/7 on-demand videogame TV

Steven Bonnell II, AKA Destiny, gets paid to play games. He is extraordinarily good, but he doesn't win tournaments. He pulls in a six-figure salary, yet he doesn't need to leave the house. Bonnell is a streamer.

He plays games on camera and invites the world to watch. Viewers tuning in get to see his computer's-eye view of the game he's playing; hear his commentary, analysis and jokes; and see his face through a small window in the bottom corner of the frame. And that six-figure salary? Well, he makes his money through the advertisements sold around his streaming.

Bonnell is among the planet's most prominent streamers, but he's not a unique case. Around the world, several players are experimenting with livestreaming – trying out new formats, schedules and games – and pulling in tens of millions of viewers in the process. Destiny's most recent stream headquarters, www.destiny.gg, has more than 41 million channel views on record; his previous channel boasts 36 million. Mike 'Wickd' Petersen recently broke the record for the amount of concurrent viewers of a stream, with 137,769 people watching him play *League Of Legends* at once.

Streaming has intrinsic ties to professional gaming and eSports, and its biggest stars still come from that niche: high-skill gamers playing titles such as *League Of Legends* or *StarCraft II*, with thousands watching along at home. But the past few years have seen the practice expand far beyond eSports. The speedrunning community has found its home on services such as Twitch.tv, beating games in record times live on camera. Others tune in to watch engaging

DOWN STREAM

Ustream.tv has provided something of a halfway house for most veteran videogame streamers in the past few years. The service doesn't have a particular focus – covering fashion, entertainment and wildlife as well as games – but as the technology behind streaming was developing, many used Ustream.tv as a short-term base. The service has gained more gaming relevance since Sony announced a partnership between the two companies at PS4's announcement event. The new DualShock 4 has a dedicated Share button, which players will be able to use to showcase video of their play on Ustream.tv. Details on exactly how the Share button will work are sketchy at the moment, but a partnership with Ustream suggests Sony is interested in the potential of users streaming games live in the future, rather than simply uploading clips.

and creative hosts such as those behind the Yogscast, who take *World Of Warcraft* and *Minecraft* as their main subjects and play in humorous new ways. Still others have dreamt up entertainment specifically for their streams: Video Game Championship Wrestling, for example, uses *WWE '13* to create famous game characters, then forces them to wrestle under AI supervision as thousands watch.

The pace of its technological advances and innovation – coupled with vast viewer figures – has thrust streaming into the frame for developers and publishers, who have even started to incorporate tools for it into their development processes. Blizzard CEO Mike Morhaime identified the rise of livestreaming as the biggest change in gaming in recent years, and his company supported the claim by including streamer-specific functions in *StarCraft II: Heart Of The Swarm*. Sony's new tack with PlayStation 4 and its Share button also means a partnership with Ustream.tv. Moves such as these from some of the biggest names in gaming shows that streaming has now punched its way into the mainstream.

Why did streaming grow so fast, and get so big? To understand how it quietly gained such a monstrous audience and relevance, we need to go back to its birth.

Twitch.tv broadcast manager **Justin Ignacio** (AKA TheGunrun) is the man responsible for pioneering many of the modern streaming techniques used today, and was there at the beginning. The year was 2007 and Ignacio was passing his time making mods for *Command & Conquer*. One day, he stumbled upon a show called Epileptic Gaming, created by Marcus 'djWheat' Graham. The show aired online every day, attracting a few hundred viewers each episode.

Epileptic Gaming's choice of provider was the now-defunct Stickam, one of the very first livestreaming websites, which was founded in 2005 with a focus on to-camera webcam streams. But what differentiated the show from conventional YouTube content was that its streams were happening live, and it had an additional hook that caught Ignacio's attention: "It happened to have its own chat. That [feature] drove me to try to show the world this stuff."

The seed of what would become today's videogame livestreaming scene continued to germinate. **Sean 'Day[9]' Plott**, who has come to be recognised as one of the world's most successful and well-known streaming hosts, remembers the period well. "There were some brutally hacked-together broadcasts in 2007, sending out an audio-only stream to another event that was providing video only, so you could provide a second commentary. But people had to know about the original stream, and know you were doing the audio stream."

It took two years before Plott would launch his own take on livestreaming. On October 22, 2009, he unveiled a rough show that interspersed footage of *StarCraft* matches with to-camera analysis. "I originally tried out Livestream.com. I didn't know what bitrate was, I didn't consider the implications of framerate, that sort of thing. I just wanted to talk about *StarCraft*."

These cobbled-together shows became known as 'dailies', referring to the daily livestreaming schedule to which Plott adhered. It wasn't long before a small community coalesced around his regular streams. He started to draw thousands, then tens of thousands of viewers. "Back then, no one knew the appropriate way to stream, so I'd chat with the audience and find out what they wanted. They wanted regularity of scheduling."

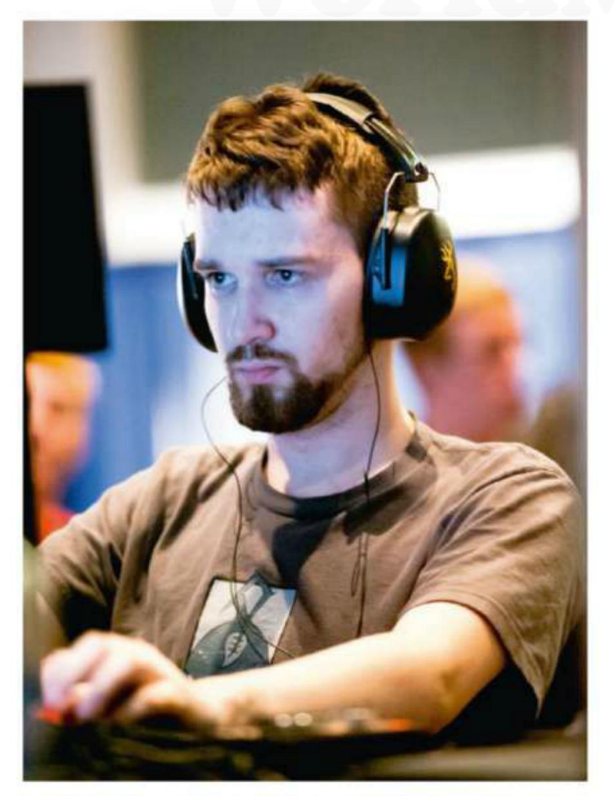
Plott wasn't the only pioneer. Ignacio had maintained his interest in *Command & Conquer*, and had risen to prominence as one of the game's go-to commentators. "I was one of the first people to start broadcasting in 720p at 30fps. That appealed to my competitive nature: competing about streaming quality in itself."

Command & Conquer provided a decent viewer base for Ignacio, but Plott looks to a clump of games released or updated at the turn of the decade as a major catalyst in streaming's rise. "*StarCraft II*, *League Of Legends*, *Diablo III*: these games drove a ton of streamers. I should also include *Dota 2*, and *Heroes Of Newerth*, which doesn't get enough credit as an early streaming game."

It was the first game on Plott's list that kicked open the gates for Ignacio after he switched focus from *C&C*. "Back in 2010, I didn't know eSports could get more than 60 viewers at a time," he explains. "Then I started casting *StarCraft II* and getting 2,000, 3,000 concurrent viewers. That actually started making me money, so I could get better computers. At the time, I was going through college, so I wasn't at all well-off, which forced me to be more creative when it came to streaming. It meant I was able to discover more tools to broadcast and help other people out."

Both men point to several of their peers as similarly early adopters. Most have a strong connection to eSports, and djWheat's name in particular emerges repeatedly in our conversations. By the time Plott began his dailies, djWheat had moved on from his Epileptic Gaming show, but maintained both his technical know-how and his onscreen charisma: a combination of skills Plott describes as "so rare". He put them to use across a range of streams and casts of live events.

Ignacio watched with great interest but lamented the visual quality of the streams. "I'd see people like djWheat or Day[9] streaming, and the feeds were terrible – straight-up awful. I used my contacts at the time to get in touch with those guys and gave them my tech, [and] taught them everything about how to get decent quality." Quickly, visual quality normalised



Bonnell started out with *StarCraft II*, but has switched to *League Of Legends*

Bonnell loves his job, but he stresses its difficulty. "Being entertaining is a lot harder than people give it credit for"

around a higher benchmark, with players using websites such as Ustream.tv and Justin.tv to broadcast their gaming sessions or shows. Blizzard's *StarCraft II* – fresh out of beta in July 2010 – drew by far the most viewers.

It was *StarCraft II* that Bonnell started streaming. "In the beginning, it was something that I did for fun," he says. "But I kept up on all the emergent technology. The websites themselves started to evolve from Livestream.com to Ustream.tv to Justin.tv and, eventually, Twitch.tv."

Bonnell was good at *StarCraft II*. He won some money at tournaments and attended live events, but he wasn't on a par with the world's best – a group of Korean players who lived in dormitory housing and spent ten hours a day on a strict practice regimen. While the traditional model of 'professional gamer' won their keep through tournaments and leagues, Bonnell realised that livestreaming offered another way to earn a living. "I realised after my first pay cheque that if I put a bit more time into my stream, I could make more money than I could in a conventional job. After I got my first pay cheque and spent more time with [the stream] next month, I quit my main job and haven't looked back."

That previous job was carpet installation and repair, something Bonnell describes as "backbreaking work, as blue collar as you can get". Soon after quitting his job and starting to stream *StarCraft II* full time, he topped viewing charts as the one of the most popular streamers in the world. He now receives a six-figure income from his work that means he can maintain his house and look after his young son without leaving his living room.

Bonnell loves his job, but he stresses its difficulty. "The being entertaining part is a lot harder than people give it credit for," he says. "Somebody should be able to turn your stream on, have a laugh while watching you, be able to watch you in relatively high quality, and see you interacting with your fans."

A good streamer, he believes, is one who can precisely identify his market. "It's like raw capitalism in the streaming business, in that anyone with a good idea can come in and do well. If you fulfil a certain niche that no one else does, I believe it's possible to get a foothold to grow very popular very quickly. If you're going to come into streaming, you should always ask, 'Why is somebody going to watch me over X, Y or Z who are already established?'"

Ignacio agrees that for a streamer, knowing your audience is the most important concern. "The biggest thing is interactivity. Interactivity can exist in many forms: you can talk about a specific thing in chat, or play against the viewers. Because it's on the Internet, there are these tools like chat, Twitter and Facebook built-in; it was those that got me into streaming in the first place."

But why do people watch videogame streams at all? Given that players require a small chunk of technical know-how to find them in the first place, and some contextual knowledge to appreciate what they're being shown, why don't viewers simply play the games that they're watching? Ignacio points to two things: "pure skill, and personality". Plott explains the breakdown of each aspect's importance in more depth. "I'd almost draw a graph," he says. "If you want to do a limited amount of

streaming, the most important part is the game. If you want to have an audience and regularity, the most important part is the personality.

"A good chunk of streaming is how you interact with the game. You are the protagonist of the story. You really want to have an awesome host, and there's so many different ways to be awesome. There's the people who are really ridiculous and really crazy. [Then there are] people I know who are exceptionally talented and try really hard. They don't even talk that much, but it's fun to watch them play, because they're doing difficult things. Or friendly, positive people. That's the reason I watch ManVsGame. He's just so pleasant!"

Bonnell condenses the theory. "It's not so much watching a game as watching a person who happens to be playing a game. Like if Denzel Washington started to stream *Halo 3*. You might not play *Halo 3*, but you'd probably watch Denzel Washington play because of who he is. That's not that uncommon: I have a fanbase who follows me around regardless of the games I play, just because they enjoy watching me play."

Bonnell can back this up with numbers: he quit playing *StarCraft II* exclusively in 2012, shifting his focus to *League Of Legends* when Riot's game overtook Blizzard's in regular stream viewership. A good proportion of viewers came over with him, proving that Bonnell has his own fanbase outside of the partisan *StarCraft* or *League Of Legends* communities. He now focuses on *League Of Legends* primarily, but flits between streaming various games, each time able to pull in between 2,000 and 10,000 concurrent viewers.

Hyper-competitive games with an eSports bent still draw the most viewers, with *Dota 2*, *StarCraft II* and *League Of Legends* at the top of the pile. But eSports has seen false dawns before, where money and talent entered a pro gaming bubble, only for it to collapse as the games played by top-tier players and the infrastructure that surrounded them were left to flounder. Are today's streamers worried about job stability?

Bonnell is pragmatic about the future. "Streaming is reliable because the advertising market exists on its own in a solid way, regardless of what happens elsewhere. Things like Google Adsense are always going to exist – that return on investment has been established, regardless of how popular any given game is."

Perhaps getting to the top in the first place is harder than securing a pay cheque once you're there. Plott dissects the state of play: "I think it's a meritocracy in the sense there are no barriers, but it's an uphill battle in a mathematical sense. There's an interesting property called being 'scale free', which means the bigger you are, the faster you grow. On the Internet, things that are more popular will grow more popular faster. If you search for, say, '*StarCraft II* strategy' on Twitch, you'll find me, maybe dApollo, and some others. But maybe some sensational player who's been online a month and made videos better than all of us might not pop up. It's not like someone is preventing him, but that is an issue, getting that first foot in the door. But there are ways around that: charity drives, or contacting major tournaments and offering free help."

Plott emphasises the importance of adaptability for streamers as well. "It doesn't have the same sort of stability that, like, being a secretary has, but you can evolve with it. Is it sustainable? Yeah, because there's still tons of ways that it's being explored. For instance, we were one of the first people on Twitch.tv to have the voluntary subscription. If

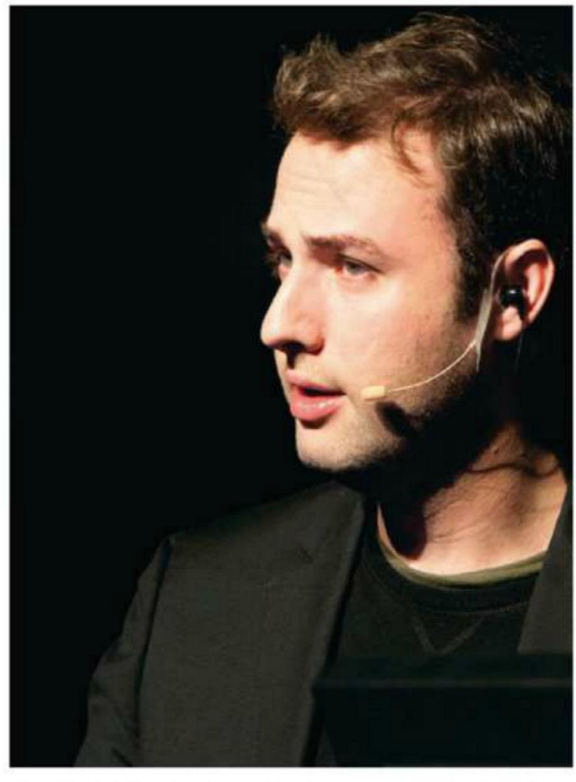
OWN3D GOT PWNED

Own3D.tv is one of streaming's biggest casualties. The Vienna-based company collapsed in January 2013, a victim of streaming's "unexpected growth", according to its farewell message. COO Oleg Kogut cited rapidly increasing technical demands as the company's downfall, arguing on eSports show Live On Three (itself streamed live) that: "In 2012, if you are not streaming 720p full HD, no one is going to watch you." Many streamers were burnt by own3D.tv's collapse. Bonnell was lured over to the service from Twitch.tv with the promises of signing bonuses and increased advertising revenue. After the company closed, Bonnell wrote a scathing analysis of the situation – including details of his withheld pay – which can be read in full online (www.bit.ly/Saxz0E).

"You might not play Halo 3, but you'd probably watch Denzel Washington play because of who he is. That's not that uncommon"



One face of TheGunrun, AKA Twitch.tv broadcast manager Justin Ignacio



Alongside his dailies, Plott also provides eSports commentary for *StarCraft II*

"I say, 'Hey, if you want to support me, just give me money...' It doesn't even fucking make sense, but the right practices just emerge"

TWITCH REACTIONS

Most of the world's biggest videogame streamers currently call Twitch.tv home, including Destiny, Day[9], *COD* streamer Nadeshot and John 'TotalBiscuit' Bain. Big companies look to the streaming provider, too: Blizzard confirmed earlier this year that all matches played in its StarCraft II World Championship Series would be available on Twitch.tv in 720p. Founded by Justin.tv founders Justin Kan and Emmett Shear, Twitch.tv pitched itself as the home of eSports streaming. That mission statement has stuck, but it's also expanded to include streams of other titles, including singleplayer games. Twitch.tv received a $15m (£9.6m) investment from venture capitalists in 2012. This year, it said that the service received 28m unique visitors in a month, and that on average those viewers each watched an hour and a half of content.

you want to donate $5 a month, you can. Go ahead, and we'll give you free stuff, and you'll get to play games with me. I say, 'Hey, if you want to support me, just give me money,' and everyone's just like, 'OK, great!' It doesn't even fucking make sense, but the right practices just emerge as people try stuff out."

Livestreaming norms are likely to be hammered out as big names move into the market. Riot has taken streaming under its umbrella, broadcasting matches from its League Of Legends Championship Series on a regular schedule. Blizzard's approach is more hands-off, as Plott explains: "Blizzard is sitting down and engaging with members of the community and involving them in things. It's nice from my side. We can say things to a game company like, 'Hey, is there any chance that this feature could be thrown in there?' And then, for example, *Heart Of The Swarm* comes out with a custom UI as requested by streamers."

The interest isn't restricted to developers of the world's biggest eSports games. Publisher Paradox's *The Showdown Effect* launched in March 2013 with a full Twitch.tv streaming suite, which means livestreaming your game is as simple as checking a handful of menu options and pressing a button.

And the announcement of PlayStation 4, given its links with both Ustream and game-streaming service Gaikai, has proved that the phenomenon won't be tied entirely to the PC in future (see 'Down stream' for more details).

Are streamers concerned about publisher influence as big companies move into their sector? Plott, for one, certainly isn't. "I think it's great. The only person it could go bad for is the publisher. Let's say they contacted a guy streaming their game and said, 'Hey, you're doing it wrong! Stop doing my IP wrong!' That person is going to think that publisher is an asshole, and they'll take their fans and go and play another game. I think every game publisher would agree it's stupid to put restrictions on people publicising themselves playing your game."

It seems Plott's mention of the scale-free model could apply to streaming as a whole. Even if publisher influence is misplaced, streaming's snowball effect is large enough – and feed production now simple enough – that even existing games will keep it in a state of growth. Ignacio cites examples of *Super Mario 64* speedruns securing 10,000 concurrent viewers in 2013, given that streams of a popular competitive game such as *Red Alert 3* barely squeaked over 60 in 2007, to prove the point: streaming has exploded in popularity in a short space of time.

These top broadcasters have their own disparate takes on streaming's prospects for the future. Bonnell sees the emergence of more efficient tech allowing better-quality audio and video; Plott looks to a TV-style segregation of channels making finding a good streamer easier. But for these streamers, and the many thousands who watch and produce streams, it's no longer a matter of whether or not their practice will take off, but how high it can rise. ■



AN AUDIENCE WITH...

EIJI AONUMA

The guardian of Zelda explains why A Link To The Past 2 is now a reality, following 22 years in a twilight realm

Released in Japan in 1991 and produced by Shigeru Miyamoto, the SNES title *The Legend Of Zelda: A Link To The Past* has gone down as one of the most revered games in history. It wasn't the first *Zelda*, of course, but it set the quintessential adventure template and put the series on a course it has followed for decades. Thus Nintendo's classic ARPG is considered holy by many, and you don't mess with sacred artefacts. Not unless you are **Eiji Aonuma**, a designer who's worked on the *Zelda* series since 1998's equally renowned *Ocarina Of Time* and who now heads up the team creating *A Link To The Past*'s sequel for 3DS. We ask him how you follow up a 22-year-old classic on a platform offering a variety of ways to play, and what prompted Nintendo to revisit its world after all this time.

During January's Nintendo Direct, you said that you intend to "rethink the conventions of *Zelda*", and then a few months later you announced the sequel to a game from 1991. Isn't that a contradiction?
[Laughs] Right. But although it looks like we're repeating ourselves, the new game will play very differently to the original. I think the new additions will make players see the game in a different way. And, of course, we'll introduce even more unexpected elements in the *Zelda* game that we're making for Wii U.

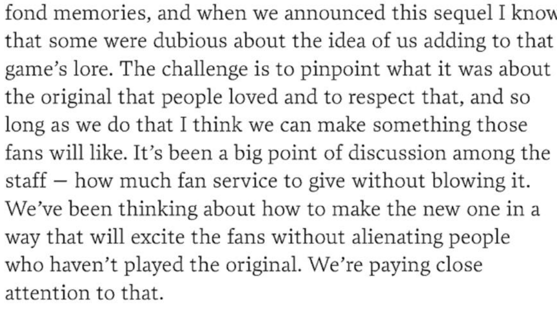
Why return to the world of *A Link To The Past*? And why do it now, some 22 years after the original?
I didn't make the original, but it was the first game I played that opened up my eyes to all the things a videogame can be. It's the game that inspired me to make games.

When the 3DS came along, I thought it would be cool to make a 2D-style *Zelda* game that you could play in 3D – it seemed like a challenge. In the meantime, one of our younger staff had this idea of giving Link the ability to turn into a painting and walk around the walls. While I was thinking about how best to implement that idea, I thought it might be interesting to combine that side-on view with the top-down view of *A Link To The Past*. So we arrived at the idea of making a new game set in the existing world of *A Link To The Past*. More than the world or whatever else, the main thing I wanted to get back to was the jaunty tempo of a top-down game. In a 2D *Zelda* game, you can zip

"I didn't make A Link To the first game I played eyes to all the things a

through the stage at a faster pace, which brings the action to the fore. I wanted players to revisit that style.

The original game is nothing short of a masterpiece. How will you live up to the fans' expectations? You must be feeling some pressure.
Yes, that's a concern. Fans of the original game have a lot of fond memories, and when we announced this sequel I know that some were dubious about the idea of us adding to that game's lore. The challenge is to pinpoint what it was about the original that people loved and to respect that, and so long as we do that I think we can make something those fans will like. It's been a big point of discussion among the staff – how much fan service to give without blowing it. We've been thinking about how to make the new one in a way that will excite the fans without alienating people who haven't played the original. We're paying close attention to that.





CV

After graduating from university in Tokyo in 1988, Aonuma was inspired to join Nintendo by the original *A Link To The Past*. He then produced SNES game *Marvelous*, which earned him a spot on the *Ocarina Of Time* team. He now oversees the series and plays in Nintendo's own brass band, The Wind Wakers.

Have you been looking at the comments from fans on Twitter, the Internet at large and Miiverse, and taking those into account?
If we respond too directly to the things the fans are asking for, they'll end up playing a predictable game. But with the Internet, social networks and Miiverse, the fans have more ways than ever to voice their opinions. We hear that input, and then we think about how to deliver something even better than what they're asking for. I really don't want fans of the original to hate it! So I'm working hard to make sure it doesn't [make them do that]. If I really get it that wrong, then I'll consider myself talentless [laughs].

What lessons have you learned from your previous *Zelda* games that have influenced this one?
Each time we make a new *Zelda* game, we're aware that if we change it too much, the fans will feel it is too much of a departure from the series. But if we don't change the game systems, then there's nothing new to enjoy. So it's all about expanding the ways to play while still making a *Zelda* game.

This new title will feature lots of things that are new to the series; right at the start of the game, there's a big surprise that will shock players. We started out with the new play mechanics, such as Link being able to become a painting and walk along the walls, and then figured out from there how to build a story around them. Rather than forcing elements of the original story into this one, we've instead focused on bringing back the characters, so you can see what happened to them after the events of the first game.

Will there be a Dark World?
Yes, that's an important point. Part of what made *A Link To The Past* interesting was the way you could move between the Light World and the Dark World and solve puzzles, and we're planning to bring that back in *A Link To The Past 2* for sure. Link's ability to become a painting will be related to that.

What are some of the challenges you've faced in rebuilding a 2D world using 3D components?
The truth is that the SNES version used lots of sneaky tricks to portray that 2D world [laughs]. For example, when you had a lot of trees, you could see the roots as well as the treetops, but in reality you can't see the roots of a tree from above. However, if you can't see the roots then it's difficult to navigate the field, so we had to show them this time, too. So again there are lots of sneaky tricks in this version.

The staff were split between those who thought we might have to stick rigidly to the world of the original and those who thought we should make something completely new. But those discussions led us to conclude that some things were worth keeping and others were worth changing. For example, some enemies and their attacks worked differently in a 2D space than they do in 3D, and with the new game's extra level of depth. So we took each element on its own merits.

The original game was made under Shigeru Miyamoto and Takashi Tezuka. Have you gone to them for advice while making the sequel?
I have asked them for advice, but the problem is that they don't remember anything! For instance, Link was originally left-handed, but later became right-handed, and everyone

The Past, but it was that opened up my videogame can be"



Zelda, as one of the Seven Maidens, played a key role in helping overcome Ganon's dark magic in *A Link To The Past*. Will the Maidens be reunited in the sequel?

has a different theory as to the reasons why. When I asked Miyamoto about it, he said, "I forget!" But rather than make this game the way Miyamoto and Tezuka did, we want to make a game that they will find exciting to play.

What kind of tools and puzzles are in the game that could only work on 3DS? Are you using the handheld for more than its stereoscopic 3D screen? After all, you have gyros, cameras, two screens, and touch input.
Well, there are players who don't like 3D and always keep it switched off, so there's nothing in the game that absolutely requires 3D, like puzzles that can't be solved without it.

The problem with the gyros is that moving the 3DS destabilises the 3D effect, so we're avoiding that. But the game runs at 60fps, while all the 3D games up till now have run at 30fps. The faster the framerate, the more stable the 3D effect, so 60fps is a big deal. And, of course, we'll take advantage of there being two screens, so that you have the map on the bottom screen and can change items by touching and so on.

The 3DS software lineup is strong at the moment – it recalls the SNES era in a way. So what was the reason you chose to make this game for the device?
By which you mean that Wii U doesn't have such a strong lineup, right [laughs]? But the great thing about the 3DS is that it offers new ways to play, or ways to reimagine past franchises, which makes it very easy to think of new types of games to make.

The character of Link has always been left deliberately blank, giving players enough room to project their own personalities onto him. What's your take on the boy in the green tunic?
When I first started making *Zelda* games, I was more interested in the enemy characters than in Link himself. But while I was making *Twilight Princess*, I was listening to the theme music on an iPod while walking hand in hand with my child, and I suddenly burst into tears. I was thinking about all the awful trials Link would have to go through in the new game. I realised that Link really is my other child. I don't inhabit the character so much as watch him from somewhere very close.

As a *Zelda* fan yourself, do you remember how you felt when you first joined the team that was making *Ocarina Of Time*?
The thing I was most excited about was the 3D worlds Nintendo was creating for N64, and thinking about how best to explore the new boundaries and turn that into a *Zelda* game. I found it fascinating and so much fun. And after I finished making the game's final battle with Ganondorf and the ending, I cried.

I remember getting a letter from a schoolgirl who had paralysis on one side of her body. Her mum had given her a copy of *Ocarina Of Time* to keep her occupied in the hospital, and she was inspired by Link to not give up. She started to put more effort into her rehab, and she regained the ability to walk again. I realised from that letter the power of games to move people, and the importance of never making a game halfheartedly.

Aside from some credits on the *Smash Bros* games, you've spent over 15 years working solely on *Zelda*. Do you have any desire to make something else?
Definitely. I'm 50 now, so I only have about ten more years to make games at Nintendo. I want to try all sorts of new things before it's too late – I don't want to get to the end of my career and only have worked on *Zelda*. But every time I come up with some good new ideas, they end up being used in a *Zelda* game! I need a six-month break to get away from the *Zelda* cycle and focus on something new [laughs]. But I'd probably end up making a game that's similar to *Zelda*; after all, *A Link To The Past* was my biggest influence.

After being so heavily influenced by *A Link To The Past*, how do you feel to be making a sequel to it all these years later?
I'm slightly worried to be making a sequel to someone else's game, that's for sure. When I was younger, I would never have dreamed of making a sequel to a game by Shigeru Miyamoto. But now that I'm older, I'm like, "Whatever!"

GAMES OF CHANCE

What does randomness bring to videogames? And why does the unexpected elicit such a powerful response? We look to gaming's origins to find the answers

In the autumn of 1975, Reginald 'Rusty' Rutherford watched a monster – his monster – wander around a computer screen at random. The orange glow of the vector monitor displayed a map, a tiny hero with a sword, and contextual information rendered in the solemn style of Dungeons & Dragons. This is *Pedit5*, the earliest known roleplaying game on a computer.

Rutherford was a programmer working on the University Of Illinois' Programmed Logic for Automated Teaching Operations (PLATO) computer system. The hardware, built in the '60s, was among the first networked computer systems to be used for educational purposes. In the '70s, decades before the Internet came into being, PLATO could connect to around 150 locations worldwide, and it was regularly being expanded to new ones. Space on the system was limited, but Rutherford's group had access to two unused files, which were labelled 'Pedit4' and 'Pedit5'.

Disregarding the rules against such things, Rutherford took Pedit5 and began working to develop a game based loosely on Dungeons & Dragons. Pedit4, meanwhile, became an instruction manual for his new game.

Rutherford was attempting to emulate an incredibly rich and intricate boardgame, but his program lacked complexity. Each dungeon contained one floor and about 50 static rooms. The creator puzzled over how to keep the experience from getting stale.

He found the solution within D&D's rulebook: randomisation. If Rutherford allowed PLATO to make its own decisions about where to place the monsters and treasure,

GAMES OF CHANCE

the number of potential level layouts would skyrocket, and the game had a much better chance of holding players' interest.

Rutherford worked on *Pedit5* until late '75, but soon after moved on, leaving behind his job, the PLATO system, and the two secret files that would later become the foundation of an entire videogame genre.

The idea to incorporate randomness into *Pedit5*'s design brought an age-old question into the computer age: what is possible when we let go and leave things to chance? But this is a question games have been posing in various forms for centuries, with human beings throwing their fates into the hands of random mechanics. Dice-heavy 20th-century race boardgames such as Ludo and Parcheesi can trace their roots back to the 1914 German-designed Mensch Ärgere Dich Nicht. The title translates roughly to "Don't be mad, man", indicative of the game's frustrating level of randomness. An irritating dependency on luck would also define the 1965 family game night atrocity called Trouble or Frustration!, depending on which side of the Atlantic you lived on. In it, players have to roll a six just to get on the board and play. These games fall into the jurisdiction of the so-called 'cross and circle' family, which most researchers believe originated with the Indian game of Pachisi.

In his 1892 book, Games Ancient And Oriental And How To Play Them, English architect and writer Edward Falkener traced Pachisi back to the 16th century, where royalty reportedly played on enormous boards with live human figures as pieces. "[Indian Emperor Akbar I] and his courtiers played this game; 16 young slaves from the harem wearing the players' colours represented the pieces," Falkener wrote, "and moved to the squares according to the throw of the dice." According to Falkener, the game was played by throwing six shells from cowries, a type of marine mollusc, in lieu of dice. Players would then count how many shells landed open side up.

And Pachisi is predated as the first game to leave an element of play up to random rolls of the dice (or a fishy equivalent) by The Royal Game Of Ur – discovered in a Sumerian tomb in the 1920s – which dates to 2600 BC and featured tetrahedral dice.

All these games, from The Royal Game Of Ur to Trouble, are really just more codified versions of a favourite BC pastime: casting lots. These were games of chance – simple systems built around a simple luck-based tool. Randomness has always been the easiest way to leave the outcome of a competition to the whim of God, instead of solely to skill.

But while today's games – both board-based and digital – owe a debt to the history of early randomisation tools, it's only in recent decades that we have begun to discover what randomness can achieve when we harness it in new ways.

'Create New World' says *Minecraft*'s rectangular button. Click it and an instant later you might find your nose pressed against a vine-covered tree trunk. Or perhaps you're standing knee-deep in water. Maybe you'll appear in a pumpkin patch, with a spotted cat lurking nearby. The possible scenarios are so numerous as to be effectively endless, generated by a fixed algorithm in combination with a random or player-given 'seed' sequence. Since each seed grows into a different world, few buttons can surprise and delight like the one in Mojang's blockbuster hit.

THE LOST WORLD

A great book has the ability to make us feel attached to its characters and invested in their fate. Derek Yu suspects that videogames can do the same thing, and with more than just characters. When players die in *Spelunky*, it not only means that they lose their loot and items forever, but the environment that was randomly generated especially for them is destroyed, too. "It adds extra meaning to your death," Yu argues. "When you die, you're not just losing what you've done, it's like you're losing that whole world. There's a more significant sense of loss." Yu is speaking about the emotional power of taking something away from the player, but he also raises an unusual question: do we feel more attachment to something if it's made solely for us?

IT'S ONLY IN RECENT DECADES THAT GAME DESIGNERS HAVE BEGUN TO DISCOVER WHAT RANDOM ELEMENTS CAN ACHIEVE WHEN THEY ARE HARNESSED IN NEW WAYS

Minecraft is about creating, living, and working resourcefully within a universe that has been instanced just for you. As a result, no GameFAQs walkthrough can tell players what's around the corner in any particular cave, and YouTube tutorials won't show you exactly where to find diamond ore. Since the advent of the Internet, videogames have been, as a rule, unable to hide secrets from their players. With its randomness, *Minecraft* spurns becoming solvable. You can learn how the game works at a basic level in minutes, but you have to play well to survive and thrive.

Like boardgames, videogames with lots of design randomness have traditionally been abstract. Think of *Tetris* with its 'T' and 'L' shapes, and that ever-elusive long block. Or consider *Bejeweled*, a game of raw systems built on the concept of matching like-coloured objects that fall from the heavens. But neither is truly random. *Tetris*, for example, generates randomly shuffled but discrete sets of all of its block types to ensure you never play a game that presents an endless procession of 'Z' blocks.

But games need not be abstract to benefit from leaving swathes of the experience up to chance. The *Diablo* series has progressively striven to randomise as much of its own content as possible, from loot drops to map layouts. And 2009's *Borderlands*, with its purported 17.75 million guns, used a random item generation system as the crutch of its marketing campaign. Even popular mass-market series like *Gears Of War* are embracing randomness to alleviate repetition. Die and restart a level in *Gears Of War: Judgment* and its Smart Spawn system sends you a group of new, randomly selected enemies to fight.



The notion of semi-authored randomness is core to the genius of *Spelunky*, **Derek Yu**'s sublime merging of the platforming and roguelike genres. Like many games before it, *Spelunky* features randomly generated levels, in this case constructed from rooms made of randomly selected tiles from a fixed set. An algorithm then runs a set of checks and populates the level with monsters and obstacles, which are also subject to randomness, but balanced by intelligent rules. You play this setup just once. Either it kills you and you restart, or you succeed and move on to the game's next world, which is built from a new set of level tiles and algorithms.

One of the most obvious benefits of this is that the game avoids becoming repetitive. Instead of falling back into a world you've partially conquered once, *Spelunky*'s levels ask you to overcome a new space that's forged by the same consistent laws. It expects you to navigate the new landscape using what you've learned from previous runs.

Randomness allows players – and even creators – of games to be continually surprised by them. But is randomness in game design all about world and weapon generation? Is creating a game with endless content a goal worth pursuing? Yu doesn't think so.

Needlessly padding out a game's length using randomness, he says, can be "one of the worst things you can do unless you're still introducing new things to the player and giving them a great experience". To Yu, this means constantly observing and learning new things, being challenged, and "having your concept of the world expand".

An extreme example of a not-fun implementation of a random system would be a slot machine. Pulling a lever and watching cherries and lemons spin teaches you nothing – the spinning is meaningless noise. Trying to understand and control it is a little like trying to divine a pattern in ➜

TV static, but that doesn't prevent some people from becoming hopelessly addicted to the machines due to the rush of endorphins they can induce. Yu calls this handling of a system by the human brain "the inherent addictiveness of randomness".

The human brain is wired to find patterns in noise, and so even when an implementation of randomness is just static, players will often interpret it as coming from an unseen controller.

Take Valve's 2007 hit *Left 4 Dead*, which may have fixed, unchanging levels, but employs great degrees of randomness in other areas of its design. Vital resources such as health packs and weapons can be found in different quantities and locations on each playthrough. The game's hordes of zombies are also placed at random, with huge waves bursting forth at times, all dictated by an underlying AI system called The Director.

The Director is really just a name given to a collection of algorithms that dictate the implementation of *Left 4 Dead*'s random elements. It has no emotions nor goals of its own, but players have latched on to the idea of The Director as an entity, and often discuss the game in terms of them versus it.

In a YouTube video titled The Director Hates Us, one player describes a recent gameplay experience. He says that The Director chose to attack him and his friends, and hid vital health pickups from them until a late part of the level. "He also threw a Witch right next to where the news van and minigun were," he wrote in the video's description.

Of course, the man behind the curtain is just a machine, but because the verdicts and outcomes delivered by it are unpredictable, players have anthropomorphised it. The Director – or the bits of code that compose him – assumes a living quality because unpredictability makes him seem human.

It is a basic human need to see agency and patterns even when there are none. It's easy to imagine how that trait has remained an asset throughout the process of human evolution. **Keith Burgun**, designer of the game *100 Rogues* and author of Game Design Theory: A New Philosophy For Understanding Games, argues that this inheritance reveals itself when people play games. When children play a boardgame like Candyland, he says, they believe that they have agency behind their dice roles. Even as people get older and begin to understand that they don't have real control over things like dice, they continue to attribute successes in mostly random games to themselves.

"People stand up and celebrate when they roll a 20 in Dungeons & Dragons," says Burgun. "They allow themselves to participate in this very human thing, this tendency to see agency where there isn't any."

Burgun remains quiet for a moment, then observes in a manner and tone that is characteristic of him and his work: "This is also the origin of God."

"PEOPLE CELEBRATE WHEN THEY ROLL A 20. THEY ALLOW THEMSELVES TO PARTICIPATE IN THIS VERY HUMAN THING, THIS TENDENCY TO SEE AGENCY WHERE THERE ISN'T ANY"

A few weeks after Rusty Rutherford left his job and his pioneering game behind him, the 18-year-old **Paul Resch** walked into the basement of a building on the University Of Illinois' campus.

Resch descended a flight of concrete stairs and entered a room lit by the neon-orange glow emitting from more than a dozen PLATO system displays. Groups of students huddled near the machines, using them to learn about the cross-breeding of fruit flies for a biology class. The program seemed to be some sort of educational game.

His own class wasn't scheduled to begin yet, but Resch desperately wanted to toy with the highly advanced machines, so he pretended to be one of the

LEGACY SYSTEM

Even in the earliest versions of *Orthanc*'s networked multiplayer, players could choose to fight with each other. This, combined with the chat mechanic, quickly caused strange social dynamics to develop. Some players began hanging around in the game for hours at a time, chatting while fooling around in the dungeon. More bellicose gamers started hanging out near the entrance to *Orthanc*'s world with their levelled-up heroes, waiting for fresh prey.

"Somebody would create a brand-new character, they'd walk in, and some guy would just kill them immediately," Resch says with a laugh. In other words, as soon as Resch added networking, griefing was born.

Later, Resch preserved the original *Pedit5* code, and both it and *Orthanc* are available to play for free on the website Cyber1.org, which hosts a PLATO emulator.

biology students, stealing access to one of the terminals.

It was here, through chance, that he discovered an abandoned file: Pedit5. Resch gathered some friends and over the course of the following months began modifying the code to improve it. Resch built networked multiplayer and a chat system into the game. He added more rules from the Dungeons & Dragons universe, and even retrieved proper permission to use them from Tactical Studies Rules (popularly known as TSR), D&D's publisher at the time.

TSR's response was mostly one of bewilderment. "They wrote back saying, 'Sure, we don't know what you're talking about, but OK,'" Resch explains.

More changes were made, and Resch decided that his game had evolved enough to warrant a new name. He titled his modified game *Orthanc*, naming it after Saurman's tower from The Lord Of The Rings universe.

Eventually, Resch designed an algorithm that would automatically create random levels for *Orthanc*. Every six months in real time, the algorithm would run and *Orthanc*'s old world would disappear forever, replaced by a new, albeit temporary, one.

A couple of weeks before the level-change event would occur, a message would display to PLATO users currently active in the game: "New levels are coming." It was a friendly heads up, but also a warning – if users kept playing right up until the moment of the level-generation event, the entire world would vaporise around them, and a new one would materialise. It was more than likely that they'd then find themselves trapped by walls on all sides.

Resch – who is now 55 and has worked for companies including Atari, Apple, and Google – was developing features that we didn't associate with videogames in the mid-'70s.

But why design a complex algorithm that only executes twice a year? Why not just design the levels yourself? Resch's reasoning was both cogent and macabre: he knew he wouldn't always be around to make new content. In a way, he was taking out an insurance policy in preparation for his own inevitable death.

Randomness in games has often been about replacing or simulating humans. Rutherford and Resch modified their games to become self-replenishing. The Smart Spawn system in *Gears Of War: Judgment* is a miniature designer included in the game who watches players and provides those who have to repeat a sequence with something new to play with.

Other videogames, such as *Spelunky* and *Minecraft*, make use of random systems not to pad out their length, but to allow for surprising situations to come about on their own. It's a totally different application of randomness than when you roll a die and win based purely on luck in a game of Ludo or Parcheesi.

The surprise that comes when a game cooks up an amazing thing the designer didn't think of is the sort of gift only videogames are capable of giving. So when choosing the random games we make or play, it seems wise to ask a simple question: do we want to be surprised, or do we simply want to feel lucky? ■



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The Rovio Story

Rovio is a company known to smartphone owners for one thing, and one thing only: making *Angry Birds*. But this Finnish developer is the steward of an entertainment empire, and it's now ready to spread its wings and come out from the shadow of its creation. You'll find out exactly what this means on p99, where we reveal its new publishing initiative, **Rovio Stars** (1). Before that, though, we tell the story of the series that propelled Rovio into the hearts of gamers in **The Making Of... Angry Birds** (2), which begins on p88. These days, of course, there's more to Angry Birds than just the game series, and on p92 we offer a glimpse of just how far the brand has come by collating some of the wide-ranging **merchandise** (3) that has found its way out of the company's fertile minds. Such success has resulted in the development arm of Rovio splintering into four separate studios, each with a distinctive focus. Starting on p94, we speak to the heads of **Studio Forge** (4), **Studio Wildfire** (5), **Studio Tampere** (6) and **Studio Stockholm** (7). Finally, we talk to **Sami Lahtinen** (8) on p98 about the challenge of building a network of internal studios, and speak with the designer behind the avian cast, **Jaakko Iisalo** (9), who reflects on his creations' huge popularity on p100.

THE MAKING OF...

Angry Birds

How Rovio turned childhood sketches into a global success story

Angry Birds is a feathered phenomenon. Rovio's series serves as an envoy for the game industry, an app that people who don't play games will happily while away their commuting hours with, but one that has also found a home on the phones of thousands of console gamers.

While it must credit its core design to the countless similar physics-based Flash games that preceded it, Rovio's unprecedented success was far from simply a case of being in the App Store at the right time. The secret to its success is hard to pin down, but intuitive controls, satisfyingly bouncy physics and a level of polish far beyond many of its peers certainly helped. Of all its ingredients, perhaps it owes most to designer **Jaakko Iisalo**'s crisp designs, which proved appealing enough not only to inspire an entire game, but also move beyond the small screen to the big one, adorn lunchboxes, and even earn the trust of the famously protective LucasArts.

"Yeah, *Angry Birds Star Wars* was a huge stepping stone," says co-founder **Niklas Hed**, pausing just a beat before delivering his punchline, "for LucasFilm." From any other company, a comment like that might seem a touch bullish, but the *Angry Birds* series has sold 1.7 billion copies across its lifetime, which earns Rovio the right to puff out its chest feathers now and again. When Iisalo sketched those first infuriated birds, however, Rovio was far from the success story that it is today.

In early 2009, the studio was still doing subcontracting work for other companies and had downsized from 50 people to just 12. Having spent more than a year on a big contract, only to have it cancelled through no fault of its own, Rovio was in desperate need of a hit. This was an opportunity, those remaining 12 reasoned, to create something all their own.



Rovio co-founder Niklas Hed

"For me, that time was sort of a hibernation," says Hed. "We took only selected projects and aimed to learn from them. We did a lot of prototyping, such as using the electronic compass of phones in games. That time taught us how technology is combined with games in a natural way, and how it isn't."

And with over 50 games already under its belt, the studio hardly lacked experience. But this time, the team decided to approach the creative process differently, aiming to create a brand that could span more than just a single game. It knew it wanted to appeal to as broad an audience as possible, and to take advantage of the growing popularity of touchscreen-enabled smartphones, but exactly how wasn't yet clear.

> "There was a definite feeling of things being on a roll and the beginning of a new era"







"We had already created several games, but because of the business and the environment back then, we really couldn't see what we were able to do," says Hed. "We'd been thinking about a ballistic tank game in the vein of *Scorched Earth*."

Rovio had recognised the growing popularity of physics-based puzzlers in the casual space, but at the time decided military equipment didn't have the mass appeal it was looking for.

"I started creating game concepts and pitching them to the management. *Angry Birds* was one of these concepts," Iisalo says. "People didn't really get the early game mechanics I suggested, but the character design was something that everybody liked: an angry flock of birds smashing through structures. After dozens of different ideas, we found the right style of game and started production. Of course, that's when we realised the birds needed an opponent..."

Sickly green pigs wouldn't have been an obvious choice to an outsider, but Iisalo had been sketching swine since childhood. And so through his own internal logic, the birds found their nemeses. Other elements of the game couldn't get away with such abstraction, however. That intuitive catapult, for example, wasn't always the mechanism through which the birds were granted flight: the initial version simply had players flick them in the direction they wanted to launch. It sounds simple enough, but the team quickly realised that the casual audience it was attempting to court didn't share their natural gaming instincts. It needed something more.

A catapult seemed intuitive, backed by the punchy physics that power the game. But while the physics has even inspired the likes of Wired to have a go at analysing the maths behind it, accurate modelling isn't Rovio's biggest concern. "There is basic maths behind it, and we couldn't have ice breaking rock, because that wouldn't make sense," **Tuomo Lehtinen**, VP of games, tells us of a title that has flightless birds and green pigs, "but the feel is the most important thing." *Angry Birds* respects the laws of physics, then, if not the laws of nature.

"*Angry Birds* ended up being the pet project of the whole studio," says Hed. "The core team was small, but everyone was working on it to a degree. We loved doing it. It really kicked our confidence to a whole new level – we loved playing the game ourselves, and there was a definite feeling of things being on a roll again and the beginning of a new era."

But polishing that early prototype took a long time, and work was hampered by a lack of resources. The skeletal team











WINGS OF GLORY
1 Some of the animation frames for Rovio's avian cast.
2 The game that started it all is as bold and colourful as ever.
3 The Mighty Eagle update brought new challenges while also allowing players to skip the trickiest levels.
4 *Angry Birds Space* has a black sense of humour, allowing players to strip away piggy spacesuits and watch them freeze.
5 The entire series has been defined by this mock-up image, which is what Iisalo used to pitch the first game









was working on several projects at once, and so had to divide its attention across them all. "At certain points it was causing delays [to *Angry Birds*]," says Lehtinen. "It's really hard for a designer to create levels when the programmer is too busy on another project to finish the engine!" And the initial budget that Rovio had set aside was rapidly depleted, almost causing the development to be cancelled.

"The early results weren't quite what we wanted," says Hed. "It was surprisingly challenging to make the game world feel real, make all the blocks feel like glass, stone, ice, and so forth – organic. The birds kept bouncing in an unnatural way and the materials just didn't feel right."

All the hold-ups proved beneficial, though, giving the team time to iterate its gameplay and the tech behind it.

"If you play something long enough you start to notice what irritates you," Lehtinen explains. "I was iterating camera controls almost until the last day of production. That was something that had to be perfect; it had to feel really, really nice. And I think one of the big reasons the game has proved so popular is because it doesn't annoy you at all. We were able to iron out all of the quirks."

Well, almost all the quirks. Play *Angry Birds* today and the experience is markedly different to the one that first launched in 2009. The iterative process on which the game was built has continued throughout its lifetime, resulting in the few clunky elements that did manage to slip by being smoothed off via regular updates. The core of the gameplay, though, remains unchanged.

When that first version launched, though, Rovio was apprehensive. "When we published the game, frankly it felt like was it was just one game among many," admits Hed. "I definitely felt that *Angry Birds* was the best game we had ever done, but there was this nagging feeling that it wasn't enough. We had done some research half a year earlier, and it always seemed to come down to the marketing – or lack of it.

"We had been working through mobile operators without a direct contact to the consumers up until then, and now we were entering the App Store, where the competition was really hard. Getting the critical mass of fans was really difficult, and if you can't manage to do that, it doesn't matter how good the game is. But in the end, we managed to catch the wave and it

PIGS IN SPACE

1 Rovio's generous update schedule sees its games regularly expanded with new levels at no extra cost. 2 *Space* allowed Rovio more room to craft creative worlds. 3 Rovio's offices are covered with filmic posters riffing on the birds' personalities. 4 Iconic scenes take on new life when Angry Birds don Jedi robes and Darth Vader masks. 5 Han shot first, while his bird counterpart unleashes a volley of player-aimed laser fire

Bad Piggies

Bad Piggies sits in an awkward hinterland between new game and offshoot. It's set in the same world as *Angry Birds*, and features those troublesome pigs, but it doesn't feel like an *Angry Birds* game at all. Rather than destroy, here you must construct, an inversion of its sister series' premise – though the rickety, rocket-powered vehicles you build catalyse their own fair share of carnage.

"The starting point for the game was an idea based on the nature of the pigs: they want to build things, and they want to go for the eggs," explains **Jaakko Haapasalo**. "In this sense, *Bad Piggies* was an original game from the start."

Despite the umbrella branding, Rovio thinks of *Bad Piggies* as its own entity, one that can develop in its own direction.

"We think both *Bad Piggies* and *Angry Birds* have enormous potential," says Haapasalo. "With this game, we really wanted to concentrate on the piggies for a change, explore what they are like. Inventive, enterprising, mischievous, fearless in their own, often absolutely terrified way, and above all irrepressibly optimistic. They'll just keep building and snickering. You can't stop them."

Though its own terrified period may have passed, perhaps Rovio has more in common with the piggies than the birds after all.

became one of the reasons why you should get a smartphone."

Over the years, Rovio has toyed with the format. Its first major deviation was *Seasons*, a release Rovio had been planning for a long time. Originally released as *Angry Birds Halloween* in October 2010, and closely followed by a selection of Christmas levels, *Seasons* now includes all manner of holiday-themed stages, even one based on the relatively obscure Chinese Mid-Autumn Festival. Such wide-reaching cultural references are demonstrative of the broad appeal of Rovio's games, but underneath its inoffensive exterior lies a much harder game. It's easy to dismiss Rovio as a kind of one-hit wonder, trading on multiple variations of the same game, but *Seasons* was a brand-new challenge presented in a familiar skin.

And *Angry Birds Rio*, which followed in March 2011, was further evidence of a company unwilling to rely on simply rehashing past successes. Being a tie-in with 20th Century Fox's animated film about exotic bird smuggling helped the game introduce new enemies, animated backgrounds, new birds, an ally in the form of bulldog Luiz, and even boss fights. It featured a new physics engine as well and, according to Rovio's figures, is unique among the series in having a large following who only play that version. As marketing for the film, it didn't do badly either: exit polls in the US revealed that the majority of moviegoers heard about it through the game.

But it was *Angry Birds Space* that deviated furthest from that initial template, gifting the birds prolonged flying time as gravity was dialled down. And, just like the first game, it almost didn't happen.

"We felt that the first prototype was way too hard, and decided not to continue with it," admits Hed. "But

> "When we published it, frankly it felt like was it was just one game among many"

Jaakko [Iisalo] kept polishing it, and I remember one session we saw the redesigned gameplay and all of a sudden it made sense."

"It took a lot of time to make it as simple as we wanted," explains Lehtinen. "At first, it felt really hardcore: space and sci-fi are dark themes, and the player could shoot essentially anywhere. It was the hardest game to make right."

But that sci-fi excursion got the studio thinking: what if there was a tie-in opportunity to be found along the lines of Rio? Rovio approached a number of companies, including LucasArts, with its idea, trying to get a feel for what would be required to make it happen. LucasArts was interested – it lacked a high-profile mobile presence, and the concept sketches Rovio's artists had put together made it clear that this tie-in would be far







Mikko Häkkinen, producer of *Angry Birds Star Wars*



from a half-hearted parody. Rovio and the notoriously protective LucasArts found a mutual respect in the careful way each handled its creations.

"To be honest, I had my worries about how rigid [LucasArt's] approval process and brand guidelines would be, but in the end everything went much smoother than expected," says *Angry Birds Star Wars* producer **Mikko Häkkinen**. "We worked with some great people who understood how important the *Angry Birds* IP is for us, and were willing to respect our wishes and viewpoints.

"It ended up being more of a collaboration where they offered us guidance on lore and things, and came up with some great ideas for matching different characters and story points."

And unlike the original game, *Star Wars* suffered from an excess of interest, with so many Star Wars fans in the company that almost everyone wanted to work on it – even in their spare time. "We ended up with such a vast amount of graphics assets that it was really hard to choose the best ones and settle on one style," laughs Häkkinen.

It created new fans, too, both within Rovio and among its players, and just maybe convinced some of those last few hold-outs to give *Angry Birds* a go – after all, there are few things in life that can't be made more appealing with the familiar scream of a TIE fighter's engines. Yet *Angry Birds Star Wars* only scratches the surface of the licence's potential and, Hed teases, how far that relationship gets taken is between Rovio and LucasArts. And likely subject to some tight non-disclosure agreements. But whatever happens next, the *Angry Birds* series has never been in ruder health – it's already found its way to PC, social networks and even PS3/360, and looks to be in no danger of losing its momentum anytime soon, either. But could Rovio really ever top *Star Wars* when it comes to tie-ins?

"There is an old joke in Rovio of combining the birds and pigs with the He-Man universe," Häkkinen teases. "You really don't want to see the concept art [we] made for those muscular bird heroes in thongs, though." ■



MERCHANDISE

Plush fund

Tie-ins are big business, providing a third of Rovio's income

Rovio may have begun life as a videogame developer, but soon after striking its rich vein of mobile game gold, it started prospecting elsewhere. A brief glance at the scene on these pages will give you an idea of just how far the Angry Birds fever has spread. Rovio is insistent: it's no longer just a developer, it's a next-generation entertainment company.

"Games are at the centre of this, of course, but we've broadened what we offer our fans with toys, animations and other high-quality brand experiences," explains executive vice president of games **Jami Laes**.

And because Rovio is a relatively young company, having been founded ten years ago, it has an edge over older entertainment businesses burdened with "established and entrenched business models" that they must somehow adapt for the digital age.

"We want to create a long-lasting brand that will be vibrant and strong 20 years from now," explains Laes. "There are plenty of brands that have lasted for over half a century."

Expect to be playing the latest version of *Angry Birds* on your iPhone 50, then. ■



1 Plush toys are Rovio's most popular and widespread tie-in product. They come in four sizes: 5, 8, 12 and 16 inches.
2 What looks like a fish tank is a miniature of Piggy Island, the home of egg-stealing pigs and pig-destroying birds.
3 Rovio has amassed a huge collection of awards. Some are oddly specific, such as Best Branded Physics Lesson, awarded to *Angry Birds Space*.
4 These red hoodies may as well be the company's official uniform. Some rebellious staff members flaunt green Bad Piggies ones, though.
5 While Star Wars might be Rovio's most high-profile link with other brands, surely Jenga is the most appropriate?
6 These boxes contain tablet covers, made out of felt, and are only sold in China.
7 For more successful piggies, this book offers 40 recipes to make the most of your eggs.
8 These activity kits are available in North America

PROFILE

Studio Forge

Visit the home of the original Angry Birds

Studio Forge is both the largest and oldest of Rovio's internal studios, with 45 staff solely dedicated to the upkeep of the *Angry Birds* series. But being the company's longest-serving segment hasn't slowed it down at all. Studio head **Jaakko Haapasalo** compares Forge to Chuck, the triangular yellow fowl from *Angry Birds* that can accelerate to deliver an extra whack of precision power. "We're really proud of our track record of delivering on time and always punching through those extra couple of blocks to get our fans the best possible experience," he tells us.

Studio Forge is, in many ways, the backbone of Rovio. It's responsible for the earliest version of *Angry Birds* – as well as its spin-off, *Bad Piggies* – and can lay claim to creating *Angry Birds Seasons*, *Rio*, *Space* and *Star Wars*.

"As the origin of *Angry Birds* and *Bad Piggies*, we carry a lot of amazing history on our shoulders," says Haapasalo with a distinct air of pride. "But what defines us right now is our desire to use that history, and our experience, to create the next generation of awesome Rovio games."

Even so, Haapasalo points to *Angry Birds Space* as the studio's proudest moment to date. "I think we were able to prove to ourselves there that we can refresh even the most successful of games, and that we can bring the same energy and the same uncompromising drive to bear time and again."

Despite being the developer behind the main *Angry Birds* series, Studio Forge doesn't maintain every game itself, instead concentrating on *Angry Birds Star Wars* and *Bad Piggies*. While the various flavours of *Angry Birds* used to be worked on more or less collectively, the growing number of studios has allowed for a new approach to divvying up the series.



Studio Forge has been part of the company since Rovio was founded in 2003, but it didn't gain its current name until September 2009





ABOVE **Jaakko Haapasalo is the head of Studio Forge. Before Rovio, he worked in the gaming arm of Finnish benchmarking company Futuremark**

"We actually try to focus more and more on specific products per studio to really bring that extra bit of creativity to the fore – that's only possible with ownership. This is also true even when we hand a game over from one studio to another – the new team is expected to bring their own identity to it, to have their own take."

The strong company-wide branding of Rovio's games doesn't inhibit the studios' freedom, however. To match the remit of being as creative as possible, there are no real boundaries, and teams are free to design and prototype as they see fit. Despite this, a firm structure is in place to get the best from everyone.



"We have quite traditional functional teams that act as a kind of professional community or peer group for their key specialities: art, programming and design," Haapasalo explains. "All the work is organised into product teams, however, that sit together in their own team room and form the real heart of our creative work. A studio management team oversees certain creative guidelines as well as scheduling and resourcing.

"But we pitch continually on multiple levels, starting with one guy, [moving] to the next, then more, and so ideas start to gather steam. Or not, of course. There's a more formal track for prototypes that have got quite far and are nearing [getting a] green light. But what really characterises the whole process is the open pitching in across the studio, a kind of friendly sparring culture, trying to egg each other on to even bigger things." ■

PROFILE

Studio Wildfire

Rovio's most social studio is bringing its key series to Facebook

Studio Wildfire is aptly named, given that it's responsible for spreading Rovio's games across Facebook and Internet browsers. Alongside the App Store and Google Play store, social networks are a colossal market, and Wildfire was the first team at Rovio to embrace them fully.

"I would like to think we are the coolest of all [the teams], but I am sure that would be a close contest," laughs studio head **Serdar Soganci**. "We were the first team to use HTML5 and Flash, and we delivered the first completely free-to-play Rovio game, *Angry Birds Friends*."

As befits a studio working with the newest and most uncertain of gaming trends, Wildfire is a relatively young team with an average age of 30. There are seasoned developers here, of course, but they're supported by younger staff in the early stages of their careers. Rovio as a whole is a diverse company, but Soganci draws our attention to the fact that one third of Wildfire's 35 staff aren't native Finns, and nearly a quarter are women.

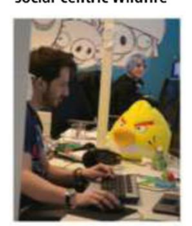
"Our goal is to create a studio where developers feel like they can apply themselves to develop the best possible games," he explains. "We have a peaceful and playful environment. There may be a couple of us who [really] wanted to be a rock star, Formula One driver or an astronaut, but the majority of us are doing the job that we always wanted to do!"

'Peaceful' isn't simply a throwaway adjective, either, since Soganci tries to keep the working day to a strict eight hours. "We do have long days every now and then, but those are the exception," he says. "Getting the best out of people does not mean pushing them to their physical and mental limits. Our developers have families, kids and lives outside of the office. We value and respect that. As a studio, our primary investment is in people, and unhappy or unhealthy people will not help us reach our goals in the long run.

"But our developers spend a lot of time together outside of work hours. Overall, we work hard to achieve our goals, and then party harder after we achieve them. We have recorded evidence to prove both cases [laughs]."



ABOVE **Serdar Soganci is the head of the social-centric Wildfire**





As well as *Angry Birds Friends* and the *Star Wars* Facebook port, Wildfire developed *Angry Birds* for Chrome

"I'd like to think we are the coolest of all [the teams], but it would be a close contest"



While thus far it has been a fairly simple matter to distinguish between the various streams of the *Angry Birds* series, Wildfire is confusing matters by launching a mobile version of *Angry Birds Friends*. As well as completing some kind of avian feedback loop, *Friends* will also become Rovio's first cross-platform game. It looks set to deliver some clear insight into just how dedicated players of the smartphone-native apps are, and if they will replay the game simply for social achievements.

At the time of writing, Wildfire has three projects on the go, one of which is maintaining the original *Angry Birds*, while another is an as-yet-unannounced new game. Over the next 12 months, however, Soganci plans to expand the studio to around 50 staff, growing its capacity in order to be able to handle five projects simultaneously.

Each team is currently kept to around ten people to promote an indie-like environment, but if future projects demand it, Soganci is happy to be flexible. Wildfire is able to work with such small teams by 'outsourcing' almost everything that isn't development-related to other teams or departments in the company.

"In general, I'm not a big believer in massive teams – I try to keep them small, optimised and efficient, so that each member can contribute, influence the project and make a difference," says Soganci. "In the future, we may have larger teams, but we'll always try to achieve big results with teams that are smaller compared to our competitors."

PROFILE

Studio Tampere

Rovio's first external studio has its own take on the world

The city of Tampere is some two hours' drive north of Rovio's HQ in Espoo, and is the location of the company's first external studio. Based in a disused cotton factory, Studio Tampere has found itself at the centre of the city's growing development scene. In keeping with the themes of distance and change, Studio Tampere is also the first of Rovio's studios to release a brand new IP – in the form of puzzler *Amazing Alex* – since *Angry Birds*.

Being so far from the core of the company can throw up its own issues, but studio head **Atte Kotiranta** admits that he likes the privacy. "Not being able to walk over to a person and talk through an issue with them is a challenge," he says. "But on the other hand, not being subject to random management walk-ins is also sometimes a blessing, because we can focus on our work until we are really ready to show it!"

Kotiranta hasn't gone completely rogue just yet, however. Tampere checks in with Espoo and fellow satellite Studio Stockholm in daily video conferences, but the focus of these meetings is very much on information sharing and cooperation, rather than establishing, as Kotiranta puts it, a "hierarchical command and control structure".





LEFT ***Amazing Alex* has mechanical similarities to *Angry Birds*, but it's about creativity, not carnage.**
ABOVE ***Angry Birds Rio* was a tie-in with the 20th Century Fox animation about a blue macaw**



ABOVE **Atte Kotiranta began his career at Nokia. He worked at THQ and co-founded mobile developer Universomo before joining Rovio's team**



Studio Tampere's internal hierarchy is pretty even, too, with artists, programmers and designers reporting to section leads, who themselves report to project producers. And within that loose structure, Kotiranta tries to keep the teams as fluid as possible. "Since the projects can live for years, we try to rotate the team over time to make sure everybody has a chance to participate on more than one project. Having people with intimate knowledge of several ongoing projects is a benefit, too, of course."

While the development scene in Finland's capital region has grown rapidly over the past few years (as we explored in the Finland-focused Region Specific in **E**253), Tampere remains relatively small. As a result, many of the staff at the studio worked together on a number of other projects before joining Rovio. This not only gives the studio a close-knit atmosphere, but provides a fresh take on the wider company's output.



"Studio Tampere is unique within Rovio because of our lack of *Angry Birds* history," Kotiranta explains. "The series' success has influenced the studios that made those games, but we try to bring new concepts and ideas to the table that are a little different from the core of *Angry Birds*."

Amazing Alex is the first proof of that approach. While it's still a physics puzzler in which projectiles are fired and stars are earned, there isn't a bird in sight. Part of its personality comes from being based on Snappy Touch's *Casey's Contraptions*, which was acquired by Rovio in 2012, but Studio Tampere very much made the game its own. And while it's since taken on responsibility for *Angry Birds Rio* and *Space* updates, the studio remains dedicated to prototyping new ideas to push the company forward, presenting a fresh project to Rovio's management every two to four months.

"We're responsible for the whole process, from deciding on a schedule all the way through to the final presentation," Kotiranta explains. "So if a prototype fails to impress, it's completely our fault. But on the other hand, it's awesome to see the excited faces when we present something great." ■

PROFILE

Studio Stockholm

This international studio has migrated the company's ethos to neighbouring Sweden

Studio Stockholm is the youngest of Rovio's four internal teams. So young, in fact, that it doesn't yet have any games to its name. But that doesn't mean that things are any less active at the company's brand-new international studio, even if it's not ready to reveal its first development project to the world just yet.

"We were very proud when we showed one of our prototypes to the whole company the other week," says a buoyant **Oskar Burman**, general manager of Studio Stockholm, "but unfortunately I can't tell you any more about that just yet."

Burman likes to think of every member of his team as a multitalented game developer, rather than focus on their particular specialisms.

"I'm also a great believer in mixing senior staff with junior staff," he adds. "Seniors are great because they've got experience, obviously, but juniors are essential, because they bring with them new ideas, and revitalise teams with their energy.

"The creative decisions for what we build, and how we go about it, all come from us. As long as we keep doing great stuff that engages the players, I don't see that changing."

Currently Stockholm is divided into small, autonomous teams working on a variety of projects. "I'm a great advocate for giving people the leeway to go and build what they believe in, and so far it's worked very well.

"We're quite relaxed and playful, but highly ambitious. It was quite clear to us that this was the culture we wanted to nurture as soon as we got those first core team members in place. And since we're the newest of the Rovio studios, we've also had the benefit of learning a lot from the others when starting."

It helps, too, that the Angry Birds brand is so well defined now, a fact





LEFT **Oskar Burman, general manager at Stockholm Studio.** BELOW **Patrick Liu, creative director**

"The decisions for what we build all come from us… I don't see that changing"



The studio is located in downtown Stockholm, right in the heart of the city

Burman cites as being key to enabling Studio Stockholm to hit the ground running. "I actually think the animation and licensed products around the games have helped a lot, because they've forced us to create very clear guides on how our characters are used and how the universe is set up."

Stockholm's makeup is different to the previous three studios, boasting a greater number of veteran console and PC developers. Burman believes this brings a different perspective, and a wealth of outside experience, to its work. When we ask if this means that Studio Stockholm has eyes on next-gen consoles, he counters by saying that he sees mobiles and tablets as being exactly that. But this coy response doesn't discount the possibility of seeing Rovio establish itself on our living-room screens as well. ■

INTERVIEW

Sami Lahtinen

The man in charge of keeping Rovio flying in formation on building a studio network

While outwardly Rovio may exude the sense of a slick machine that fires out mobile hits with steady regularity, maintaining its characteristic quality and visual identity across four internal studios is a huge feat of coordination. After all, the company numbered just 12 people during the development of *Angry Birds*, but has reached more than 600 staff today. Here, we speak to senior vice president of game development **Sami Lahtinen** about the challenge of building Rovio up from such a small initial team to so huge an outfit without compromising its work.

Has it been challenging to expand the company so rapidly?

Well, we believe that good comes from having passion for – and full ownership of – what you're doing. But at the same time, of course, we're building an entertainment powerhouse and massively ramping up our games production capacity. In large operations like this, it's always a challenge to maintain that friendly, garage-like creative environment and avoid multilevel decision making and unnecessary bureaucracy. But I think we've succeeded!

In such a big company, isn't it inevitable that the garage-like feeling you describe is compromised, though?

I don't think that has to be the case. We've tackled it by keeping each studio small and lean, and carefully building a network that allows each of our four studios to have their own identity and style, freedom to innovate, and the responsibility for shipping their own games. In each studio, we have a healthy combination of creating new games and updating the existing titles.

Obviously, though, it's not a jungle where each of the studios is pulling in their own direction. For example, to ensure porting and postproduction are as smooth as possible, certain rules and principles are followed and everybody respects that – and everyone in our studios works towards the goal of delighting our fans! But there is a good amount of independence and diversity.



Lahtinen has helped the company grow from 220 staff in 2012 up to over 600 today

"We're building an entertainment powerhouse, ramping up our capacity"



You've set up in Tampere, and now Stockholm too. How important is it for Rovio to have creatives in different areas and countries?

From a talent acquisition point of view, it's key. It's much easier to ramp up studios in three different places than trying to hire for each in one area. But even then, ramping up a studio is never easy! We already have 30 different nationalities working in our studios, and talent from all around the globe, [which means] different cultural backgrounds. That helps a lot when you're creating games for a global audience. We're not too far apart, though: it only takes about two hours to get from Espoo to Tampere or Stockholm, and we're only operating in two time zones.

How closely do the studios work with Rovio's merchandising department?

We try to synchronise launches across all our business units, but firing up all the cylinders at the same time requires a lot of coordination and cooperation. When we launch a game, or introduce new characters, we make sure all the consumer products are on the shelf ready to go. As a company, we're building brands, and while games are [an] essential part of it, they're not the only piece in the puzzle. Whether it's a can of soda, plush toy, hoodie, activity park, book, or just a small keyring, it all plays its part in building the Bad Piggies or Angry Birds brand.

You have an animation studio now – is that another moving part for you to incorporate into the company's development goals and ethos?

Absolutely. We tell stories with our games and the animation team tells stories with animated content. The story is the same, though! We just launched Angry Birds Toons, a video channel offering new animations on a weekly basis. It's now integrated into all our games, allowing us to introduce our characters' personalities and their world in detail. Oh, and when the animation team throws a party, we sneak in. ■

PROFILE

Rovio Stars

The publishing initiative that aims to help talented mobile developers get noticed

Rovio has gone from the relative simplicity of a game developer to a full-on media company in an amazingly short space of time, and now builds entertainment brands as much as it does videogames. There's the merchandising arm of this expanding operation and now an animation studio, too. But with the company's enviable profile and audience reach, surely the most natural next step would be into publishing? Rovio Stars is exactly that: an attempt to showcase other developers' games to Rovio's quarter-of-a-billion monthly active users.

But the idea for Stars wasn't dreamt up in a boardroom decorated with projected profit charts. "At trade shows and various events through the years, we have been approached by a lot of developers with some amazing games," explains director of development **Kalle Kaivola**. "Some of these really blew us away with their creativity and execution. We fell in love with them, and wanted to figure out a way for *Angry Birds* fans to enjoy them, too."

So other than that player base, how will developers benefit from Stars? Well, all the usual responsibilities of a publisher are covered, of course, from quality assurance and localisation to submissions. But Rovio will also bring its branding and marketing experience to bear on each game it decides to release, and will help studios to polish their games in that crucial final stretch of development. But Kaivola stresses that guidance on branding doesn't mean these games are going to lose their identity. "We are not looking to 'Angry Birdify' any titles out there," he assures us, potentially coining a new social gaming term in the process. "We're looking for games where the team has a solid vision and ownership of what they want to create."

Rovio Stars also won't have a fixed genre of game that it focuses on. While



Kalle Kaivola, director of development

"We want Rovio Stars to be associated with top-of-the-genre, exciting games"



it's true that an obscure or particularly complicated effort might not be the perfect fit for the company, Rovio's only real stipulation is that the games it publishes be approachable. There will be no thematic restrictions, either, but perhaps the biggest challenge for hopeful creators will be impressing the company that defines success in the mobile space. "Most importantly," Kaivola says, "we need to fall in love the game and we need to feel our fans will love them, too."

At least at first, Stars won't be a prolific endeavour, aiming to publish a handful of games each year to avoid "bombarding players". We compare the idea to Nintendo's Seal Of Quality. "That



Nitrome's physics-based puzzle game *Icebreaker: A Viking Voyage* is the first Rovio Stars release

is definitely the idea we are going for," Kaivola agrees. "We want to stand fully behind each one."

But even for a company with Rovio's resources, creating a publishing arm has been a challenge. "Purely building the structure and finding all the right people for the right jobs takes a lot of time and effort," says Kaivola. But he believes that the investment has been a worthwhile one, and he points to Rovio's existing framework as a useful stepping stone.

Stars will remain separate to Rovio's in-house games, though, existing as its own entity and focusing exclusively on thirdparty projects. And while those first Stars games will follow in *Angry Birds'* footsteps, releasing on iOS and Android, platforms will be evaluated on a title-by-title basis. The only real crossover, Kaivola admits, is that Rovio will probably avoid launching Stars titles on the same day as its own major releases.

In overpopulated mobile marketplaces that have yet to offer any meaningful solution to the problem of discoverability, piggybacking on a company capable of making itself heard seems like a shrewd strategy for any smaller studio. And while it won't solve discoverability issues on its own, Rovio Stars' model of endorsement is a welcome first step.

"We want Rovio Stars to be associated with top-of-the-genre, exciting games," says Kaivola. "Games that *Angry Birds* fans can trust to provide a great gameplay experience." ■

INTERVIEW

Jaakko Iisalo

The designer behind Angry Birds on creating a new template for mobile success

Jaakko Iisalo is the man responsible for sketching the first hatchling Angry Birds and conjuring up the concept behind them. As such, he has helped to create a set of characters as iconic as any in the Mushroom Kingdom. Having graduated from an artist to creative director since setting Rovio's biggest success in motion, Iisalo looks back over his legacy.



Iisalo believes the future of games lies in their social aspect and foresees more location-based applications

How did you settle on the art style for *Angry Birds*?
Finding the style took a while, especially [for] the characters, which took many months to complete. The final style was more like a compromise between what I wanted and what Tuomas [Erikoinen], our former game artist, actually did. My goal was to make everything as clean and simple as possible... Using a clean cartoon style was also a natural choice from target audience and production points of view.

How do you feel about those original designs in light of *Angry Birds*' spectacular success?
It all feels a bit strange! The truth is that during the last couple of years there's been so many people involved in the development of the brand that I don't really see *Angry Birds* as purely my design any more. I'm more like an initiator for all of this – the characters and the brand have a life of their own now.

So how has your role changed?
I started working at Rovio as a game artist back in 2005. Since then, I've had many different titles and roles in the company, the biggest change being the switch from art to game design back in 2008. I have quite a lot of experience in different aspects of game development, and because of that my job has always been very hands-on. At the end of 2012, my role changed drastically again when I stepped into the role of creative director for Rovio's Forge game studio.

"It's about consistency of quality more than trying to create massive-scale hits"



Do you still get final say on design, or is it more democratic than that now?
I believe that game development can't be a purely democratic process, as someone has to have the final say on what should be done to get great results. This doesn't mean that you shouldn't listen to what people have to say, since most of the time the job is about collecting others' ideas and picking the best ones. It's also healthy to know that you're not always right... It's the team making the game, but every boat needs a captain.

Do you hope to repeat your success, or was *Angry Birds* a one-off?
I think it's very unlikely that this scale of success will ever happen again, but naturally I hope to create more great games that people enjoy playing. For me, it's about consistency of quality more than trying to forcefully create massive-scale hits.

What games really inspire you?
I enjoy different types of games and try to play as many as possible: console, mobile, PC, even boardgames. One of the greatest experiences I've had lately was *Journey* by thatgamecompany. I felt that the game really took the industry a step forward. I'm still heavily inspired by the classic 8- and 16bit era of gaming, though, Shigeru Miyamoto and Nintendo being the biggest influences.

Do you ever worry that *Angry Birds* overshadows Rovio's reputation?
I'm not really worried – we just have to keep on doing great things. People will probably always compare anything we do with *Angry Birds*, but I also see that as a strength... It's always a good thing if people are interested in what you do. ■



REVIEWS. PERSPECTIVES. INTERVIEWS. AND SOME NUMBERS

STILL PLAYING

Dark Souls 360, PC, PS3
A modded PC port means higher resolutions and framerates, and while seeing Blighttown run at a stable 60fps is worth the price of entry alone, the console versions retain a huge advantage over even the beefiest of rigs. The Smough and Ornstein fight was a cinch compared to the struggle to summon human help for it beforehand. FromSoftware has created a terrifying world, but there's naught so hellish as Games For Windows Live.

Clash Of Clans iOS
It's another free-to-play game vying for your time while pretending not to eye up your wallet, but *Clash Of Clans* is uncommonly deep. It's split into two halves: building your base requires resource management while you try to recall that history lesson on motte-and-bailey castles, while the PvP and PvE RTS segment balances nuanced strategy with just the right amount of chaos to keep things interesting, and a team league to ascend with friends.

Battlefield: Bad Company 2 360, PC, PS3
As *Battlefield* and *COD* continue to veer into ever more solemn – and similar – territory, a trip back through one of DICE's more characterful entries provides a reminder of what made *Battlefield* feel so fresh in the first place. *Bad Company 2*'s brash humour and varied campaign continue to offer bombastic thrills to go along with Frostbite's accomplished penchant for destruction.



REVIEWED THIS ISSUE





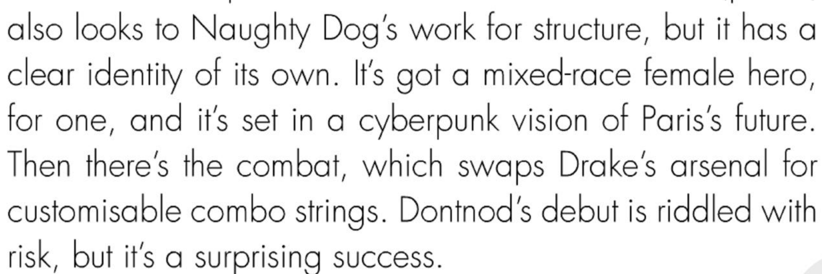
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Remember when everything was Uncharted?

We expect you've seen the memes decrying the state of big-budget game development at E3 2012. Internet wags invented a new genre: the walking-forward simulator. Games that funnelled players down corridors masquerading as open worlds, skill-free processions of one barely interactive set-piece after another. Everything, they said, was *Uncharted*.

That has always been an unfair way to describe the series. It's had its problems: its linearity, certainly, and the way Nathan Drake alternates between mugging for laughs and killing for sport. Yet the *Uncharted* problem has its origins not in the corridors of Naughty Dog, but in the studios that have managed to draw such obvious inspiration from it while missing the point about what makes it special.

This issue, we see the *Uncharted* problem subverted. *Remember Me* (p112) also looks to Naughty Dog's work for structure, but it has a clear identity of its own. It's got a mixed-race female hero, for one, and it's set in a cyberpunk vision of Paris's future. Then there's the combat, which swaps Drake's arsenal for customisable combo strings. Dontnod's debut is riddled with risk, but it's a surprising success.





Few expected *The Last Of Us* (p104) to be the best fit for the *Uncharted* template either; indeed many believed it was a stopgap designed to keep Naughty Dog ticking over while the A-team worked on a Drake game for PS4. As a survival horror, it solves the ludonarrative question: it's kill or be killed, after all. The peril facing Joel and Ellie makes for a believable emotional relationship that's far more powerful than *Uncharted*'s flirty, will-they-won't-they exchanges.

It looks remarkable, too, a fitting swan song for PS3. Perhaps in a couple of years, crudely drawn webcomics will sound a different refrain. Everything was *The Last Of Us*.

The Last Of Us

Publisher SCE
Developer Naughty Dog
Format PS3
Release June 14

Had Naughty Dog closed its doors after *Uncharted 3* and decided there was no way it could top what it had accomplished, its legacy would be secure. But news of *The Last Of Us* held such incredible promise because it represented a blank slate for one of gaming's all-star teams. Naughty Dog takes full advantage of that fresh start, removing the few lingering constraints that held the *Uncharted* series back from masterpiece status.

As daring as *Uncharted* was in terms of figuring out how to deliver the spectacle of Hollywood cinema without completely hijacking interactivity, the setup built on established foundations; it's Indiana Jones with a prettier star and a different set of ancient treasures on his to-loot list. *The Last Of Us* operates within an equally well-established genre – the post-apocalyptic milieu of films such as Children Of Men and I Am Legend – but its creative decisions are far riskier and, as a result, deliver much higher emotional payouts.

For one thing, you won't find a terrorist psychopath boasting about pushing the red button on this game's apocalypse. A species of Ophiocordyceps unilateralis fungus – perhaps the closest thing the real world has to a zombifying agent – has mutated, and is now capable of infecting humans as well as insects. Mere hours after the fungus takes up residence in the body, people turn into something monstrous. Their heads deform, assuming a variety of clefts and reef-like protrusions. Fungal stalks push grotesquely through fissures in skin.

You're cast as Joel, a stoic but likable Texan who in the two decades since the outbreak has migrated to Boston. Joel who? Just Joel. *The Last Of Us* pulls off the game equivalent of throwing summer blockbuster volumes of cash at a film production and casting not Brad Pitt but some no-name actor who doesn't even come up in an IMDB search. Naughty Dog's vision for this apocalypse demands a believable everyman, not a plainclothes superhero like Nathan Drake.

The Last Of Us doesn't just tell you that you're playing as an Average Joe, but reinforces it on a mechanical level. There's none of Drake's cliff-scaling athleticism; if you need to get to an out-of-reach perch, you'd better start scouring around for a ladder. In early combat encounters, you'll find yourself skulking about behind cover trying to pick off stragglers. You'll scavenge for stray bricks and bottles that you can toss against walls to lure combatants to concealed areas of the map. The strangling execution that follows takes a few arduous seconds for Joel to carry out, reinforcing the sense that he's no UFC prize fighter. And the boozy sway of your aiming reticle – stabilised through upgrades later on in the game – means the chances of squandering a precious bullet is high. Joel's a survivor, but that doesn't make him a firearms expert. In short, the game tastefully avoids the ludonarrative dissonance that arises from Drake being presented as a friendly treasure hunter while asking players to pile up hundreds of bodies wherever he sets foot. Joel kills because he has to, and there's no winning smile when the shooting stops, just overwhelming relief.

Naughty Dog has delivered the most riveting, emotionally resonant story-driven epic of this generation



The tension of confrontation is only heightened by *The Last Of Us*'s realtime crafting system, which requires you to hunker down in corners making health kits while your terrifying enemies shuffle past mere feet away. Just as nail-bitingly, when you want to heal yourself, you'll have to watch helplessly as Joel bandages his wounds. Resources dotted around the map are achingly, wonderfully scarce, and many serve dual purposes: the alcohol and rags that combine to make a health kit can also craft you a Molotov cocktail.

While this is not an open-world game in the textbook sense, it feels remarkably dense for employing such spacious environments. A typical slice of unbroken space might incorporate a street, several alleys and a variety of multistorey shops or dwellings. This approach to level design gracefully serves the game's narrative context: when an apocalyptic event knocks out the structured routine of law-abiding society, you'd expect there to be more latitude in your decision-making.

The world of *The Last Of Us* is big enough to get lost in, and without the aid of a minimap, we did on several occasions. Whereas *Uncharted* often felt like walking down a scenic but clearly delineated hiking trail, *The Last Of Us* prizes deep, meaningful exploration. You're constantly looting for supplies, not just for ammo and upgrades. You'll also find handwritten letters, voice recorders and journal entries. *The Last Of Us* has a linear tale to convey – Joel's smuggling of a 14-year-old girl named Ellie to a revolutionary group called The Fireflies for reasons we shan't spoil – but makes its tale feel less prescribed than *Uncharted*'s by letting you play the role of amateur detective. The result is a story-driven game that begs to be played, not observed from the couch.

Joel and Ellie soon depart from Boston and their trek across the country is equal parts The Road and On The Road. There are bleak moments in abundance, but there is also scattered levity of the sort that would make Cormac McCarthy spit in disgust. The complications that propel Joel and Ellie to far-flung regions of the continental United States enable Naughty Dog's art team to serve up the sort of wide-ranging visual buffet it all but perfected while bringing Drake's globe-trotting to life. Ellie grew up sequestered in the Boston quarantine zone, and seeing the wider world through her unjaded eyes makes you appreciate the subtle details. There's a steady parade of sights to marvel at, such as a purple-pink sunset illuminating a ruined skyline, the glisten and ripple of waist-deep water as you wade down a flooded street, and the way the visual depth of field noticeably shifts when you hoist your

ABOVE Your glee at finding a hunting rifle is somewhat tempered by it being so slow to reload that you'll soon return to one of your trusty pistols. While weapons are selected with the D-pad, switching between sidearms means stopping to take one out of your rucksack.
LEFT Ellie's remarkably well realised as a character, but as a partner she stays largely out of trouble. Unlike *BioShock Infinite*'s Elizabeth, she often keeps out of your sight, too, prompting a few checks to see if she is still about



BELOW If you are in any doubt you're playing a Naughty Dog game, it's made abundantly clear a few minutes into the campaign, when you're told to boost an AI partner up to reach a high ledge



ABOVE Joel's focused hearing, activated with R2, turns the world black and white and enables him to pinpoint enemies around corners or through walls. Its range can be extended with pills dotted around the game world



If a Clicker catches you, you're done – and escaping one that's on your heels is a tough task indeed. It's surprising that such a deadly enemy is introduced so early in the game, but it puts you quite firmly in your place

weapon to aim. This is the work of a studio that has got the best out of PS3 by pushing it to its absolute limits.

Just as the game rewards you with a steady, unmistakable sense of character progression, it offers a dazzling sense of geographical progression as well. Without picking out the exact map markers on the pair's travelogue, your surroundings morph from the drab brick and mortar of quarantine zones to foothills, mist-covered peaks, rivers and woodland.

The journey feels like a reconciliation of sorts. Nature introduced the fungus that brought about all this mess, and as you move toward your goal, you're forced to step deeper into the natural world and learn to depend once again on its capacity to sustain life. *The Last Of Us* feels like an open-hearted love letter to America in its most primal form. The traditional folk instrumentation of Oscar-winning Argentine composer Gustavo Santaolalla (Babel, Brokeback Mountain) adds to the earthiness of the game without stepping on the toes of every moment of calm Joel and Ellie get to savour between outbreaks of violence.

It's a game of remarkable character, too. Troy Baker and Ashley Johnson's performances as Joel and Ellie breathe poignancy into the grace notes of the script, but there is emotion even when the game is completely silent. When you crouch behind cover as Joel, he'll instinctively steady himself by resting one hand against the wall; position yourself close to Ellie and Joel's arm stretches over her shoulder like the wing of a bird shielding its young.

If given too much screen time, the infected assailants could easily distract from this sensitively cultivated human drama, but the game's biggest threat is used sparingly. The sonar chirps of the so-called Clickers, who stumble slowly about in blindness listening for your footfalls, will make your heart race, not least because they will kill you instantly if they get their hands on you. If you want to grab them, only a shiv will take them down; they can't be choked like humans. Runners, meanwhile, will sprint straight toward you, bobbing and weaving to make sure you burn as much ammo as possible. Ammo and resource shortages deftly force you to employ the whole range of your arsenal instead of merely picking a favourite gun and running with it all the way to the finish line. And even on the lower difficulty settings, this is no easy journey. Just because *The Last Of Us* is a game about survival doesn't mean it necessarily wants you to get accustomed to surviving. We watched Joel and Ellie die screaming with alarming frequency – little wonder we saw so few human beings on our travels.

The Last Of Us strips away the geek-centric fan service so commonplace in contemporary games. For every highbrow idea explored, developers seem compelled to throw in a lowbrow one to counterbalance it. *The Last Of Us* resists such compromises, and does so without disappearing up its own backside. Naughty Dog has delivered the most riveting, emotionally resonant story-driven epic of this console generation. At times it's easy to feel like big-budget development has too much on the line to allow stubbornly artful ideas to flourish, but then a game like *The Last Of Us* emerges through the crumbled blacktop like a climbing vine, green as a burnished emerald.

10



TWO'S COMPANY

The companionship of Ellie's AI introduces a wildcard element to any encounter. In one particularly memorable fight in a dockyard, we crept up behind a cluster of three guards, grabbing one from behind and pressing our gun to the side of his head. At this point, you have the option of shooting him, strangling him or taking him hostage and backing away. We're leaning towards the latter option when, out of nowhere, Ellie screams, "Hey, asshole!" and disrupts our plan by hurling a brick into the head of one of the other two enemies, stunning him. There's no time to plot out our next move: we shoot our hostage, attack the brick-stunned target with a plank of wood, then close in together with Ellie to neutralise the final combatant.

Post Script

How Naughty Dog revitalises the post-apocalyptic setting

The thing about an apocalypse is that, for the survivors at least, it's never truly the end of the world. But that would perhaps be a mercy for the characters in *The Last Of Us*, given the circumstances in which they routinely find themselves. Most live in the quarantine zones that have sprung up in the vicinity of major US cities following the outbreak – typically on their perimeters, since officials attempted to neutralise the contagion's spread and wipe out the infected in crowded urban centres via bombing campaigns.

Not content to simply wait around for his daily food ration and to do the mandatory labour detail that the military has imposed to maintain his zone's infrastructure, Joel has become a black-marketeer, smuggling in goods from outside. People are desperate and malnourished. The game doesn't have to tell you this, it simply lets you stumble upon a barbecue grill lined with rodent carcasses.

Joel's smuggling activities resemble the familiar trope of a prison inmate working connections to secure contraband for fellow inmates. Despite the presumably righteous motivations for erecting the quarantine zones by FEDRA – the Federal Disaster Relief Agency, an obvious doppelganger for the Federal Emergency Management Agency – the measures taken to keep the populace safe have resulted in city-sized ghettoes hemmed in by towering concrete walls and military personnel serving the function of prison guards. The daily food rations and mandatory labour detail make the comparison feel even more apt.

In one particular quarantine zone you encounter in a later chapter, the combination of extensive urban flooding and FEDRA's reactionary measures evokes the horror of Hurricane Katrina's aftermath in such a palpable way that it cuts almost too close to the bone. The bottom floor of a bookstore has been cleared to make room for makeshift cubicles and what looks like a mix between an airport security queue and a cattle pen. These quarantine zones expose the murky distinction between safe haven and incarceration. Ever visited a zoo and wondered what it feels like to be an endangered animal living in captivity because its habitat has been destroyed? You'll know after playing *The Last Of Us*.

The boon for players is that stories set in jails typically culminate in a jailbreak. Without spoiling the circumstances surrounding their meeting and the significance of their journey, Joel finds himself responsible for smuggling a 14-year-old girl named Ellie out of Boston to a neighbouring outpost so that he can deliver her to a revolutionary group called The Fireflies. There's a pleasing symmetry to their name, in that the flies you hear buzzing prior to the menu screen signify death and rot, whereas fireflies become tiny beacons that illuminate the dark, however faintly. Unlike their insect mascot, however, this group packs a mean sting, embracing armed revolt as a grim necessity.

Minutes later, we realised the houses we were looting belonged to the people who'd fled to the sewers we'd just left



Just in the image of the firefly, *The Last Of Us* teems with symbolism, but never of the ham-fisted sort. One of the levels sees Joel and Ellie creeping through a Boston museum full of paintings and artefacts related to America's founding, echoing not just the revolutionary ambitions of The Fireflies but also the messy gestation of a new society, which America is in the process of experiencing all over again. The broken watch on Joel's wrist speaks to the sense in which the passage of time loses all meaning in the wake of a pivotal trauma.

The Last Of Us also remedies *Uncharted*'s collectibles problem, which punctured that series' fantasy with the most shameless of videogame contrivances: sprinkling priceless treasures about on the ground in plain sight. Collectible artefacts in Naughty Dog's newest game serve a vital narrative function. Since most of the environments you encounter lie in ruin or have long since been abandoned, there's room for the game to sate your curiosity with fresh insights into the horrific events that unfolded before you arrived.

For example, while travelling through a network of sewers, we discovered the remains of what appeared to have been a self-sustaining community at one point. We found plastic barrels and pipes used for rain collection, and portable toilets with detailed sanitation instructions posted on the wall beside them. There were booby traps to warn of intruders. It was obvious a number of families with small children had taken shelter here. There were makeshift nurseries with toys, playmats, and whiteboards displaying a handwritten alphabet. When we left the sewer, we thought we'd left behind that disturbing scene. Only minutes later, we realised the houses we were in the process of looting belonged to the very people who'd fled to the sewers we'd just left. We found letters they'd written. It turns out that Naughty Dog can do environmental storytelling as skilfully as it can do the tightly scripted sort.

Naughty Dog doesn't shy away from inviting moral quandaries either, humanising enemies (the human ones anyway) in a manner that *Uncharted* studiously avoided. While hiding behind cover before one encounter, we could hear two enemies conversing about the infected threat. "You get bit?" asks one. "Not today. You?" the other replies. "Not today," says the first with a laboured sigh. It's an important reminder that the people inhabiting a game world – even the enemies you are about to shoot in the head – can make a place feel sympathetic and real if their creators can imbue them with depth and emotional complexity. ■

Animal Crossing: New Leaf

Publisher Nintendo
Developer In-house
Format 3DS
Release Out now (JP), June 9 (US), June 14 (EU)

Rarely has adding more ingredients to an already successful recipe made quite such a difference. *Animal Crossing* got so much right the first time that each sequel until now has seemingly had little room to improve the formula. The GameCube version got away with it because so few had experienced the Japanese-only *Doubutsu No Mori* on N64. DS's *Wild World* succeeded mainly thanks to the portable format's suitability for the game's realtime nature. But by 2008's *Let's Go To The City* on Wii, the routine had begun to feel too familiar. *Animal Crossing: New Leaf* has a revitalising new flavour, and in 3DS it's finally found the ideal place to settle down and make its home.

The title suggests otherwise, but *New Leaf* is no reinvention. At its core, this is *Animal Crossing* as it ever was: bug catching, fishing, fruit picking and fossil excavating are still the core activities of most daily play sessions. The money you earn is used to buy furniture and items of clothing, and to pay off a ballooning mortgage provided by an ostensibly charming raccoon that you grow to loathe. A quiet hedgehog seamstress and her outgoing sister provide the materials to design clothes and a shop front to showcase them. Neighbours ask you to deliver items and regularly request you think up new catchphrases for them to greet you with. Been there, done that, bought the citrus gingham T-shirt.

Much of *New Leaf* is the same, then, but much more has changed. Upon arriving in the village, a mix-up leads to you being appointed mayor of your new home, a role that enables you to authorise building projects villagers can contribute to. You'll still need to raise the majority of your funds alone, but the development of your burgeoning hamlet offers a much stronger feeling of ownership; journeys to friends' settlements no longer prompt observations about flower arrangements and native fruits, but coos of surprise at bridges and fountains, campsites and coffee shops. There's broader scope for customisation of furniture and clothes, with more opportunities to flex your creative muscle. And there are more ways to share your work with others, including museum curation and a dream world that allows players to run amok in a facsimile of your village without any harmful effects to the real thing.

Katsuya Eguchi created the series as a way to deal with his homesickness, yet if the earlier games had a touch of the introvert about them, *New Leaf* sees *Animal Crossing* become a full-blown socialite. As such, it's little surprise that the online side allows for smoother communication than ever. It's now possible to create a list that makes it easier for trusted friends to visit more regularly, while the GameCube edition's tropical island makes a welcome return, hosting a variety of minigames that support up to four players. Beyond the immediately obvious interface improvements – no one, we imagine, will miss *Wild World*'s touchscreen character movement – streamlining is everywhere. Animals still have distinctive personalities, but conversation with them is comparatively brisk, while orchard planters will be pleased to learn that fruit will stack in groups of up to nine. And while we rather miss the flapping panic of Blathers the owl as he reluctantly accepts a new bug into his museum (instead, you get a comparatively dry description when viewing each exhibit), we'll concede it's sensible to make his patter optional. Donating is less hassle, too: any new items are highlighted, and several can be handed in at once. *New Leaf* is a game that's more respectful of your time than any of its predecessors, and while activities are more plentiful than ever, you'll also accomplish more before it's time for real life to intrude and your 3DS's lid to snap shut.

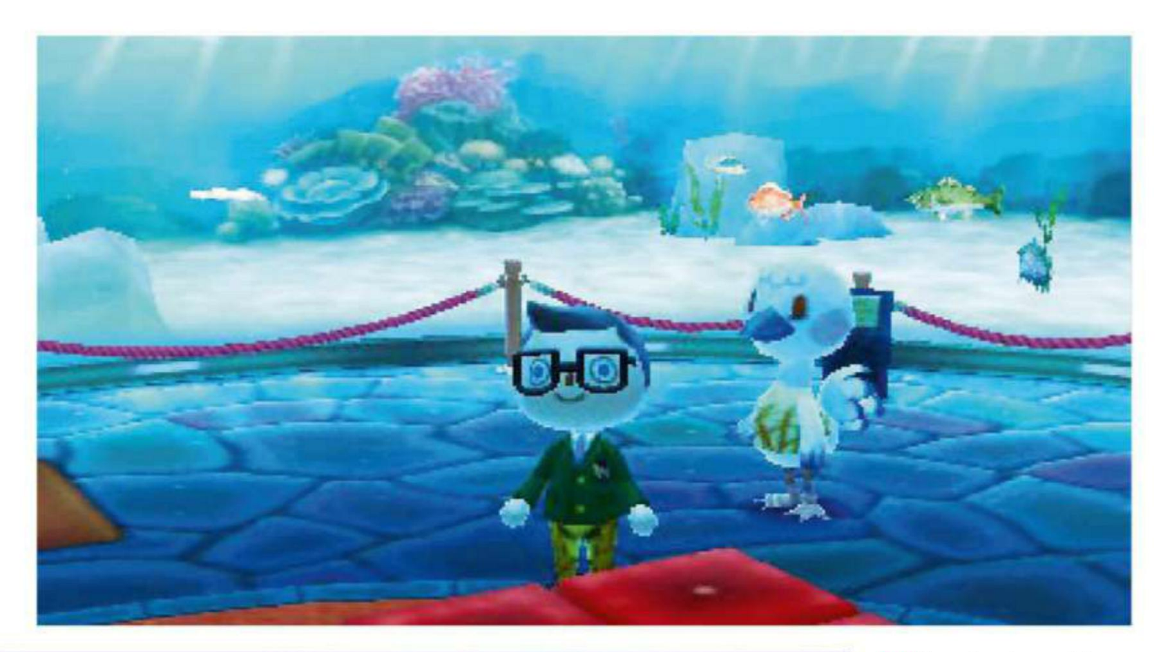
> Ultimate Edition seems like a more apposite title to signify a traditional template that's stretched to its logical limit



Admittedly, these are all minor tweaks that do little to change the game's fundamentals, but in combination – and particularly in light of the series' previously glacial evolution – *New Leaf* feels like a much snappier production. By streamlining the systems, Nintendo allows the focus to shift onto the thousand tiny discoveries it offers. The first month in particular is bursting with little bubbles of surprise. On Monday, you'll welcome a new villager; on Tuesday, you'll witness the construction of a new shop; Wednesday introduces a fresh line of furniture and an old face making an unlikely return. Those intimately familiar with the series are the most richly rewarded. Newcomers won't understand quite why the first visit to the Able Sisters' shop prickles with such poignancy, while long-time fans will delight in spotting nods to GameCube favourites. An extra sweet treat comes in the form of fortune cookies that hold Nintendo-themed prizes, and the chance to win a Blue Falcon with Play Coins was enough to prompt a tenfold increase in steps on our Activity Log. As ever, Nintendo pays extraordinarily close attention to minutiae, and *New Leaf*'s many tiny visual details and animations help to make its world – your world – all the more convincing.

There's more of just about everything here, in fact. As such, *Animal Crossing: Ultimate Edition* seems like a more apposite title to signify a traditional template that's been stretched to its logical limit. There's a nagging sense any future editions might need to shake the ideas tree a little more vigorously lest a conservative approach to progress be confused for laziness, but this iteration does enough to feel like a high watermark for a series that has never been far shy of excellent. If it's preaching to the converted, then it's a sermon delivered with uncommon confidence and no little charisma. True, refinement is never as exciting as reinvention, but just about every day you play it, *New Leaf* will give you at least one reason to pause and consider if this isn't the exception to the rule.

9



RIGHT The museum interiors have had a welcome redesign, all the better for appreciating with the improved camera, which can now be rotated in increments through 360 degrees. Villagers will come to admire the exhibits as well



LEFT Player characters are taller, which allows for a wider variety of clothing. Meanwhile, the run-up to Halloween sees the Able Sisters stock a range of spooky masks





ABOVE Kapp'n is back to serenade you with melancholy ditties on your way to the tropical island. It's a chance to catch rare bugs and fish, and earn minigame medals. The latter can be traded for furniture, or for a wetsuit.
LEFT A friendly alpaca will paint your furniture in alternative colour schemes (and he'll do it cheaply, too), though the selection is fairly limited. Certain objects, however, can be personalised with a stylish custom design

Post Script

Interview: Aya Kyogoku, director; Katsuya Eguchi, series creator

New Leaf represents a significant step forward from Wii's *Let's Go To The City*. We talk to director **Aya Kyogoku** and producer and series creator **Katsuya Eguchi** about the player's new official role, and the art of balancing *Animal Crossing* games to appeal to both veterans and beginners.

Where did the idea for playing mayor come from?
Aya Kyogoku At the start, we decided that we wanted to deepen and widen the freedom that players have, so we provided a wider variety of furniture pieces and so on. But at the same time, we wanted the player to have influence on the whole of the town. So you can choose wherever you want to build your house, or put your fountain, or any of the other public works projects. We questioned why the player [would be able to] do these activities, and so becoming mayor came naturally.

***New Leaf* allows for a much greater degree of self-expression than was possible in any previous *Animal Crossing* title. Would you say that it's a central focus of the game?**
Katsuya Eguchi There's always a cycle in *Animal Crossing*. You collect your favourite stuff and try to create your own favourite place and show it to others, then you see what other people are doing and the differences between their ideas and yours. This stimulates new ideas of what you can do, and I believe this keeps motivating players to play longer. This cycle of generating interest is applied to a wider area this time – you have such things as the Happy Home showcase, the StreetPass features or the Dream Suite, and these new additions keep [that cycle] turning.

The game's been out in Japan since November – what kind of response have you seen from Japanese players?
AK There's no one specific thing, but what I've noticed is a lot of people use social networks and blogs to communicate about the game. There's a function in *New Leaf* to take screenshots, for example, which you can upload to Twitter and Facebook; there's a service that started in Japan that allows you to do this easily. *Animal Crossing* players talk a lot about what's happening in their game, and publish or upload designs they made in the game, so there's been a lot of communication about *New Leaf* outside the game. For example, during the first fishing competition in the game, 'fishing' became one of the most used words on Twitter in Japan, and other words like 'carp' or 'black bass' started trending around this time. While people are exchanging this information, it's giving them even more fun with their *Animal Crossing* world.


Aya Kyogoku, director


Katsuya Eguchi, series creator

"During the first fishing competition in the game, 'fishing' became one of the most used words on Twitter in Japan"



There are a number of new characters. How do you decide on the roles for new animals?
AK In the majority of cases, first we had a particular role and then we decided which animal should fill that role. Sometimes we'd make a judgement based on the behaviour of the real-life species, but at the same time the series has been going for a long time and we just wanted to bring in new kinds of animals. One example is the tapir: there's a Chinese legend that they eat your bad dreams, so we made that association with the Dream Suite. On the other hand, for Leif the sloth, who runs the gardening shop, we first decided on the animal, and then we started working on his characterisation.

You both have *New Leaf* villages. Which activities take up most of your daily play sessions?
KE The big difference from previous *Animal Crossing* titles is that this time you can communicate with people you don't really know. *New Leaf* provides opportunities for players to see towns and houses created and decorated by users you have no direct contact with. That's one of the elements I really like.
AK By StreetPassing other players, you can find new surprises at the Happy Home Showcase. I like to go shopping and look at the selection of furniture, and pick out pieces to decorate my houses. The Happy Home Showcase turns itself into a kind of huge shopping mall I can browse to see how people decorate and customise furniture. That has a lot of benefit to me as an *Animal Crossing* player rather than as a developer, and I hope the same kind of thing happens among European players.

Satoru Iwata said that *Animal Crossing* would not use microtransactions for, say, premium furniture items, but is paid content something you might explore for the series in future?
AK For *New Leaf*, we're only planning to distribute items through SpotPass, [which means] users can enjoy them free of charge.

What's next for *Animal Crossing*? Can you keep adding more to the current template, or are you thinking of making wider changes?
KE We have already started thinking about what to do next, but there is no concrete direction yet. First, we need to decide which hardware to develop a new *Animal Crossing* for, and then we want to use that hardware and find out what it's capable of and what kind of features it provides. Then we can start thinking of elements of *Animal Crossing* and how we can realise them using the hardware. So until we discover these new inventions, we will not decide the direction. ■



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Remember Me

Dystopias are where bold ideas meet imperfect reality, and humans forget to be human. *BioShock*'s Rapture is the twisted remains of Andrew Ryan's Randist ideals, for example, and City 17 is the result of Dr Breen's misjudged appeasement policy towards hostile alien overlords. Likewise, Dontnod's pulpy sci-fi debut pictures a world where memory is digital and easily managed via a brain-implant technology called Sensen. The dark flip side is that happy recollections have become a commodity, and dealing with political dissidents is as easy as rounding them up and pressing Delete.

You experience this future from the perspective of Nilin, a resident of 2084's Neo-Paris and activist 'memory hunter', whose own past is stripped from her in the game's opening seconds. Soon after, a mysterious comrade named Edge helps her bust out of La Bastille, and from there you reluctantly join the Errorist cause against big bad Memorize, the sinister corporation behind Sensen.

Dontnod hasn't constructed the vividly detailed cityscape of Neo-Paris just so it can turn its lens flare setting to 'JJ Abrams' and throw in humanoid robots, even though it does both. Rather, it follows in the footsteps of the best sci-fi stories and uses far-flung tech to reflect on the human condition. Nilin herself is the locus of and voice for much of the game's big questions about what really makes us who we are, and whether the ends justify the means. It wouldn't work if she wasn't a rounded character, but she's a powerhouse of a protagonist, instantly likable and remaining self-aware throughout. She's a beguiling mix of strength and sensitivity, sarcasm and fire, external certainty and internal conflict, despite a few cheesy lines and missteps. It's a shame the rest of the cast isn't nearly as strong.

Her quest for the lost fragments of her mind drives a beautiful, highly linear and incredibly filmic thirdperson adventure-brawler. Traversal instantly recalls *Uncharted*, asking you to scramble along handily telegraphed precarious ledges and leap from pipe to pillar as you clamber about the ramshackle Slum 404 and gleaming Second Empire arches of the St Michel district alike. But Nilin's Sensen and a growing menagerie of requisitioned environmental powers – including a *Metroid*-esque arm cannon – provide excuses to layer fresh puzzles on top of this familiar core, and occasionally force you to make stretching mental connections of your own.

Nilin's no Nathan Drake analogue in combat, either. Instead of cocking a rifle when she meets resistance from either the oddly sympathetic mutant Leapers or burly Sabre Force private policemen, she's a lithe close combatant who relies on fluid dodges and swift, precise strikes. She only has four combo strings, but each move within them can be assigned Pressens, with various effects. Red Pressens are all about raw power, yellow ones regenerate health, purple ones shorten the cooldown on special moves and blue ones greatly multiply the effect of the Pressen before them. For extra nuance, the later you place a hit in a combo, the better it performs, and you need to time each new hit to coincide with the previous one landing or risk breaking Nilin's flow.

While tapping out four combos sounds like it might get repetitive fast, there's enough else going on that we didn't want for extra strings till the final third of the game. Complementing the basic moves is a wheel of five special powers, AKA S-Pressens, from invisibility to area-control Sensen overloads. You can also use your arm cannon to bust riot shields and drop clambering Leapers, and overload Sabre Force troopers' minds in cinematic finishers if you can stun them with power Pressen hits.

Publisher Capcom
Developer Dontnod Entertainment
Format 360, PC, PS3 (version tested)
Release June 4 (US), June 7 (EU)

Nilin's tale has bags of heart to play off against its existential quandaries, all grounded by gaming's newest female star



REMEMBER LI?
Remember Me's boss fights stick in the mind, and are often unusual in the extreme. Early on, Kid Xmas – a grandstanding ex-comrade – tries to take you down on TV. He summons an arena for a brawl that comes off like a pastiche of fighting games, and Dontnod also decides this is the moment to teach you a new style of combat. It's a segment that feels like a tacit nod to *Street Fighter* and Yoshinori Ono, but a more explicit tie-in is found in the preorder DLC combo pack, which adds a Dragon Punch, Flash Kick and Spinning Bird Kick to Nilin's other moves.

You use all these powers on a well-pitched progression of enemies, some of which will gently encourage rejigging your Pressen allocation to cope. But there is a flaw in the system: the rate at which you unlock new Pressens is too slow to fill all your combos till the game's twilight hours. You can hasten it through skilful play and by finding secrets in the world, but even so you'll have to rely on shorter sequences for too long, a limit you feel when the basic move pool is already on the shallow side.

Much like the hodgepodge skyline of Neo-Paris, *Remember Me* sandwiches an extra pillar into its packed structure: memory remixes. Deployed at infrequent intervals, these sections take you to an abstract mental plane to tinker with your subject's recollection of an event. You rewind time by rolling back the left stick; hold it still near a glitching object to influence both your target and the situation. Effectively, then, you scrub about a timeline seeking switches, but these short sections are designed in such a manner that they make for a palate-cleansing way to absorb a bit more exposition.

Like any game built around the cinematic adventure template, *Remember Me* is ultimately dependent on its story. Schlocky and silly in places, but potent and reflective in others, Nilin's tale has bags of heart to play off against its flamboyant bosses and existential quandaries, all grounded by a charismatic female star. While the world building isn't on a par with the best – hampered by a civilian population as robotic as its metal cohorts – a rich backstory and architectural detail make Neo-Paris a place worth visiting. It is, in other words, exactly the kind of tale you'd happily watch play out on any screen – silver or plasma.

8

RIGHT Leapers seldom play fair, mugging you en masse to break up your combos. Some are even able to render themselves invisible in shadow. This means you'll have to master dodging if you want to see an attack string through to its end





TOP Every hit you land and every one you take adds to Nilin's Focus gauge, which can be unleashed in destructive S-Pressens. Finding the Errorist stashes that add new chunks to her meter isn't always easy, but it's worth it to be able to chain these moves on later bosses. **ABOVE** Nilin's search for answers takes her to some of Neo-Paris's least glamorous places. Expect to delve deep into the bowels of the city and see some of its poorest districts before the story is done

Neo-Paris is strikingly beautiful. It's a place where graffiti-ridden urban slums are built around ancient structures, and ivory towers dominate the skyline

Dust 514

Publisher CCP
Developer In-house
Format PS3
Release Out now

An awful lot can happen in three seconds. Or nothing can happen, and then you get shot in the back. That's our baptism by bullet into *Dust 514*'s unforgiving future – and it foreshadows a lot of what's to come. After customising a freshly spawned clone with new armour and munitions purchased via *Dust*'s in-game store, we deploy on the surface of our very first planet. Once there, we just about find time to tweak our controls before a hotshot sniper treats us to our second look at the deployment screen within half a minute. It's brutal and disorienting, but mostly just expensive. It costs us 3,064 ISK to replace all our gear.

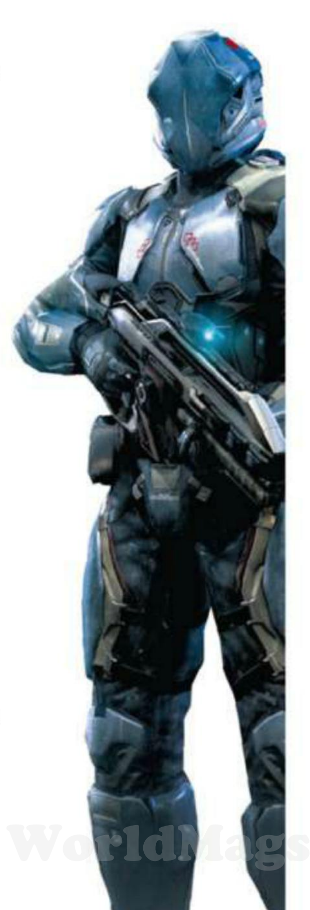
We keep playing, of course, because *Dust 514* is a fascinating, groundbreaking game. Whereas most games are released, *Dust* has been inserted; it's a full free-to-play shooter that's tied into the *Eve* universe on every level, from art style to servers. It's precisely the kind of ambition wed to technical achievement that makes you forgive brusque introductions, not least because *Dust* shows CCP bravely abandoning its safe little corner of high-security space. Land battles for planets that already exist within *Eve*'s galactic sprawl slot seamlessly into the fiction, sure, but the FPS engine, map design and resulting console playerbase needed to make that vision a reality all present fresh tests for the studio.

Dust fails them. Divorced from its ambitious, cross-game context, *Dust* is a lacklustre shooter that provides little more than the bare-minimum framework for large, objective-based battles. The functional visuals reduce a galaxy's worth of planets to a series of smearily textured rocky surfaces that seem to have rolled off the production line next to the one making *Dust*'s prefabricated industrial buildings. A lack of aesthetic charm might be forgivable, but it has repercussions for navigation, too. By replicating level furniture and a smattering of layouts across star systems, CCP has solved the tricky issue of providing maps for an entire galaxy, but the result is battlefields that feel neither distinct nor memorable. There's no flow to these maps, no useful landmarks or obvious chokepoints, though this does at least ensure players doggedly follow markers during objective-based gametypes.

Combat has about as much personality as the bleak, dust-blown worlds. There's none of *Halo*'s gently exaggerated physics, *Shootmania*'s relentless velocity or *Call Of Duty*'s immediacy. There's just shooting people with guns, albeit while battling against some suspect hit detection and sludgy controls. Granted, some guns are more entertaining to use than others, but those you have to pay for.

Dust 514 is a pay-to-win game of breathtaking chutzpah, but also refreshing honesty. There are two currencies at play in this fledgling economy (which, in time, will link up with *Eve*'s own). The first, ISK, is liberally handed to players for competing in and winning matches. The second, Aurum, must be purchased via the in-game store. This is textbook free-to-play design, though CCP's copy of said tome must be missing the chapters that suggest offering players occasional crumbs of premium currency on the house. In refusing players who don't pay access to the game's best weapons and equipment, the studio has erected a prohibitive quasi-paywall around its free-to-play game. It's galling to lose an encounter because a player you got the drop on was better equipped, but it's also inevitable when map knowledge counts for so little and combat is generic.

The promise that your actions will have significance in another game entirely doesn't make Dust an entertaining one



To be fair, *Dust*'s battles are meant to be won on menu screens. Adequately 'fitting' your character (a bit of awkwardly borrowed *Eve* ship jargon) is crucial for success. You can save multiple fits, which can be switched between every respawn, effectively letting you change class on the fly. And there's a kind of mech-game pleasure in tinkering with a new build while keeping a cautious eye on the ISK price of all the precious equipment that needs to be replaced when you die. Since you need to invest skill points in order to use the vast majority of weapons, items and vehicles, this short-term build tweaking naturally spools into long-term MMOG-style character planning. It's in stat-packed menu screens, not on the battlefield, that *Dust* feels most part of the universe in which it nominally takes place.

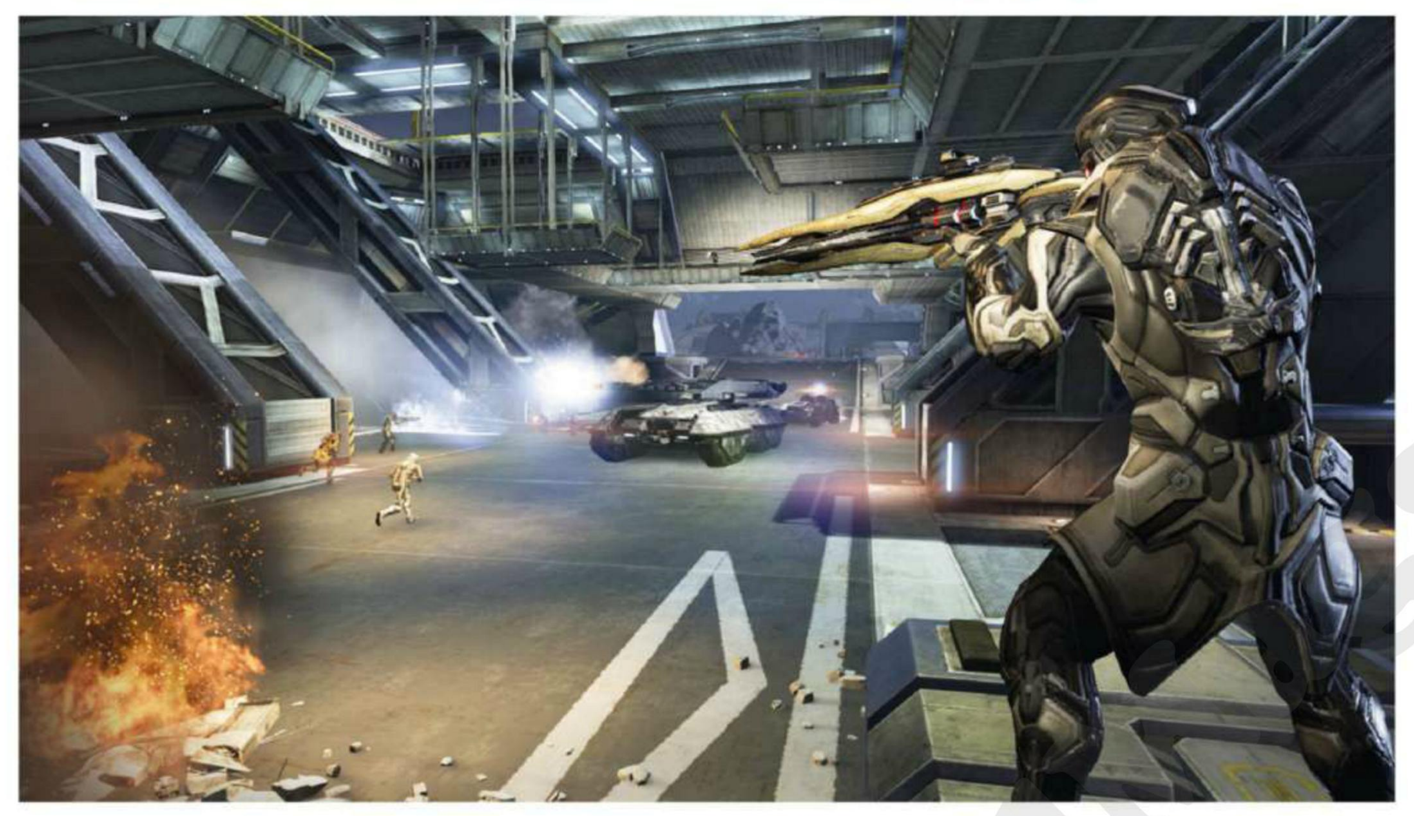
Orbital strikes – the means by which *Eve* players can rain lasery death on the *Dust* players below – connect the two games, but their effect is curiously prosaic. Sure, it's rather dramatic to request aid from a player in a different game entirely, but from the perspective of a lowly grunt an orbital strike is just another killstreak reward, an AOE attack not particularly distinguishable from *Modern Warfare*'s predator drone. Join a corporation, meanwhile, and you'll benefit from organised battles with genuine ramifications for player factions within the *Eve* universe. But the promise that your actions will have significance in another game entirely doesn't make *Dust* an entertaining one.

With *Dust*, CCP promised something that had never even been attempted before, and it delivered. *Dust* takes place in *Eve*. The setting is the same, the currency is the same, and the corporations can hold players from both universes. It's just not enough. Because without *Eve*, there's no point to *Dust*, a bland free-to-play FPS that can't even capture the continent-spanning scale of *PlanetSide 2*, despite having a whole galaxy to play with.

4



LEFT To use a vehicle, you'll need to purchase the appropriate skill book first with ISK, and then spend skill points on the abilities. Once that's done, you can tweak your vehicle's fit just like that of your clone. BELOW While you usually need to replace guns when you die, some items are available in 'blueprint' form. If you own a blueprint, then you can replace the item in question as many times as needed. BOTTOM *Dust 514* shares a galaxy with *Eve*, but the starmap has been simplified for readability. However, unless you're involved in corporation battles, it doesn't really matter where you're fighting



RIGHT Fighting with an organised squad is the best way to play *Dust*: the large maps mean many pairs of eyes make for a better chance of holding a position. Plus, squad leaders get to call in orbital strikes





Game & Wario

Publisher Nintendo
Developer In-house (Intelligent Systems)
Format Wii U
Release Out now (JP), June 23 (US), June 28 (EU)

Confused, lacking in direction, constructed from half-formed ideas yet shot through with flashes of inspired brilliance: Wii U couldn't wish for a better match than *Game & Wario*. It's a comedy show pilot in game form, a collection of loose sketches that never quite hangs together, but offers moments of surreal joy and design ingenuity that, with a sharper focus, could have coalesced into something special.

Its first and perhaps biggest hurdle is expectation. Players will see Wario's name on the box and Intelligent Systems' logo on its reverse and understandably expect a carnival of fast-paced, anarchic mayhem. Yet *Game & Wario* is not a *WarioWare* game (except during one of its 16 activities, where it all too fleetingly is). Its games are not micro but mini, a distinction Nintendo is distressingly keen to make, as if there was something wrong with *WarioWare*'s design. Arriving several months after Wii U's launch, it doesn't even have the ancillary benefit of demonstrating the console's featureset, beaten to it by the more rounded *Nintendo Land*. This is an ideal pack-in title, a bundled collection of tech demos arriving far too late to the Wii U party.

Tellingly, we've already seen some of its highlights. Pirates is 2011 demo Shield Pose fleshed out slightly into a rhythmic challenge that sees galleons fire arrows for you to catch with your GamePad, flicking them free with a sharp jerk downwards in time with the beat. As with most of the games here, it's slight but it's gorgeously presented, entertaining and heartily silly, asking you to strike ridiculous poses with the GamePad in rump-shaking interludes. Miyamoto's curious obsession with measuring everyday items became Measure Up at E3 2011, and gets a repeat airing here, in which you're given a series of specifications – a 50-degree angle, a circle with a 5cm radius – to try to draw with the stylus. It's surprisingly competitive with two players, but again there's not enough of it.

The same can't be said for Patchwork, a puzzler that walks a fine line between soothing and tedious, and has an inexplicably generous 90 stages. Slotting complex shapes into a grid to form pixel patterns has an oddly therapeutic quality, while the simple designs that emerge when they're completed have the rudimentary charm of a completed Picross. But it's an interloper here, a 3DS eShop puzzler that's got hopelessly lost. It's superior, at least, to a feeble stylus-flicking variant on tenpin bowling, and the dreadful Ashley, a ponderous side-scrolling shooter that serves only to prove that gyroscopic control is rarely a match for an analogue stick. Ski, meanwhile, is a wintry, disco-themed take on the *Nintendo Land* game Captain Falcon's Twister Race, and mildly superior if only for its comparative brevity.

Novelty value is much higher in Kung Fu, a thirdperson platformer viewed from above on the GamePad screen, allowing you to gauge landings with greater accuracy as your avatar leaps through ink-and-wash obstacle courses. Shutter is a five-stage reminder that a new *Pokémon Snap* would find an ideal home on Wii U, though there's little impetus to return once you've snapped the subjects in each level. Arrow makes similarly smart use of both screens, asking you to fire your bow at encroaching Wario-bots, which become Whac-A-Mole targets should they reach the GamePad's touchscreen. Better still is the deliriously daft Taxi, which provides a *Super Sprint* view on the TV and an in-cab perspective on the GamePad, tasking you with shooting people-stealing aliens before returning the rescued citizens home. Once more, it's too short, but it's one of the more convincing arguments for Wii U's dual-screen setup to date.

This is an ideal pack-in title, a bundled collection of tech demos arriving far too late to the Wii U party



A stronger case is made by Gamer, the undisputed standout. Here, Nintendo obsessive 9-Volt attempts to beat his mother's *WarioWare* high score under his bedcovers while she patrols nearby. You concentrate on the small screen while keeping an ear out for footsteps on the TV, squeezing the triggers to hide should the door handle rattle. The mother's demonic presence makes her a genuinely unsettling enemy, not least when she bursts from the TV like a substitute for The Ring's Sadako Yamamura, her eyes shining like headlights. Fake scares – a cat, an old man in a wig – only add to the tension of this nerve-racking game. And your reward for surviving the ordeal is the best unlockable of the lot: three stages of regular *WarioWare*.

Three of the multiplayer offerings are only briefly diverting. Sketch is Pictionary in all but name, while Fruit is a cutesy take on Chris Hecker's *SpyParty*, asking TV-watching sleuths to pinpoint a GamePad thief. Disco sees two players challenging each other to a dance-off, taking turns to tap out a short series of notes that their opponent must match to avoid conceding points. All are perfectly serviceable, but it's unlikely any will see many repeat visits. Islands is the exception, a diverting asynchronous amusement that pays tribute to *Super Monkey Ball*'s marvellous Monkey Target, asking players to launch small creatures from a GamePad net to scoring zones on the big screen. It's surprisingly strategic – while you attempt to secure a decent score, you must ensure you can't be knocked off by the next player, and a spinning multiplier and a mischievous seagull add just the right dose of unpredictability.

Beyond the obligatory late arrival of the birdlike Pyoro, that's your lot. As a launch-day showcase, *Game & Wario* would certainly be worth your time – the likes of Gamer, Taxi and Islands offer something delightful and different – but six months on from Wii U's launch, it seems too much like an afterthought, a stopgap to fill a worryingly barren release schedule. Given his rich history, Wario deserves better than this.

6



ABOVE Frame your subject well in Shutter to get full marks. The generous time limit means it's not too hard early on, but later levels see you trying to work out who's behind which mask in a lively stage performance







TOP Patience is the name of the game for Fruit's thief. Behaving like an AI character proves alarmingly tricky, and it's essential to mingle among the hordes as often as possible, especially as a crosshair sporadically pops up to highlight the area you're currently occupying. ABOVE The *WarioWare* obsession with noses returns. Gamer contains a HD update for the mandatory nostril-picking minigame, while Arrow allows you to tickle an onscreen nose with pepper. LEFT Ski's blend of cel-shaded slopes and gaudy disco trappings is one visual highlight of the package, even if players are forced to concentrate on a relatively distant – if more readable – top-down view on the GamePad


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Grid 2

Our review of *Race Driver: Grid* (**E**190) opened by discussing the controversy its screenshots generated before its release, and it feels appropriate to repeat that for *Grid 2*. This game looks a hardware generation ahead of the original, and it's raised the hackles of incredulous Internet commenters all over again. When those doubters finally get their hands on the finished game, we wouldn't blame them for continuing to suspect that some underhand trickery is afoot. Where the first game was drenched in bloom, *Grid 2* is pin-sharp and vibrant, flooding the screen with colour and consigning its predecessor's Vaseline blur to history. Car models are near photoreal when you catch them in the right light, and you'll be hard pressed to find a single low-res texture in the detailed backdrops.

Grid's warm, animated riposte to *Gran Turismo 5*'s somewhat clinical take on racing returns, too, with naturalistic lighting, excitable crowds cheering, and all manner of trackside distractions. It occasionally proves too much – Chicago's billowing discarded newspapers, sewer steam and the sparks from the underside of a monorail look beautiful, but conspire to obscure both the racing line and your opponents – yet for the most part the drama is welcome. And it all runs at a steady lick, only dipping below 30fps in the busiest pileups.

All of this effects-laden geometry does come at a cost, however: *Grid*'s cockpit view is gone, though apparently not many will care. While we're partial to in-car perspectives ourselves, Codemasters' telemetry reveals that only five per cent of its racing-game players use it. Nixing the view and using the freed-up memory elsewhere makes good sense, then – there are still bumper and bonnet cams for precision drivers – but the decision is less easy to reconcile with a series that lets you embody a driver and play out their career.

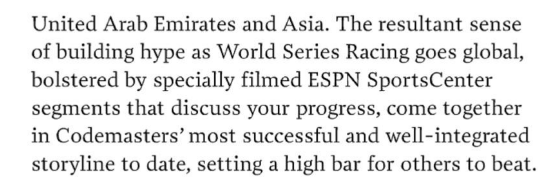
Which explains why the limelight has shifted slightly from the racer you control to the World Series Racing championship that you've been enlisted to help promote. Funded by investor Patrick Callahan – who spends his time either congratulating or chiding you via IM – the US-based championship starts out small. By taking part in promotional events and proving your skills in other clubs' competitions, you help increase awareness of the championship.

Instead of raising money, this time around you must gain fans (accrued in blocks of 25), who take more or less notice of you depending on your performance, while progress through singleplayer depends on the exposure you create. Critics of Codemasters' penchant for American racing will find more to bemoan in the opening portion of *Grid 2*, which has you make your way around US cities and along coastal routes in US and Japanese muscle cars. But you'll be racing Alfa Romeos in Europe by the second season, and by season three you'll be drifting Hondas and Mercedes through the

Publisher Codemasters
Developer In-house
Format 360 (version tested), PC, PS3
Release Out now

Your opponents will overcook corners, but never in a way that feels like it's been engineered for your benefit





United Arab Emirates and Asia. The resultant sense of building hype as World Series Racing goes global, bolstered by specially filmed ESPN SportsCenter segments that discuss your progress, come together in Codemasters' most successful and well-integrated storyline to date, setting a high bar for others to beat.

There's plenty of variety in the events, too. Drifting is no longer awkwardly consigned to its own mode and instead features among checkpoint dashes, pack racing, time trials, overtaking challenges, one-on-one face-offs and five-minute endurance sessions that see the route reconfigured as you drive. The only events that you won't look forward to are the Japanese Touge runs, which can be won by crossing the line first or putting five seconds between you and your opponent. Unfortunately, the minimal-contact rule will often see you disqualified even when another car rams into you.

Instances of questionable refereeing aside, *Grid 2*'s AI is exceptional. Your opponents will regularly overcook corners, spin out entirely or get tangled up in spectacular accidents, but never in a way that feels like it's been engineered for your benefit. And on tighter, shorter tracks, they'll put up a convincing fight even with medium difficulty selected, moving to block you and even aggressively shunting you, depending on the driver. To avoid a lonely race on longer events, however, you'll want to crank up the difficulty level.

Regardless of how brave you find yourself feeling, your opponents make for on-Tarmac company of unprecedented quality. But racing with 11 friends will always be the best option and *Grid 2*'s multiplayer comes with its own campaign, the ability to upgrade your cars and the chance to reap peer approval for the bright-pink livery you've painstakingly created for your ride. There's local splitscreen, too.

But all of these achievements, spectacular as they are, fall by the wayside next to *Grid 2*'s handling model. The original feels comparatively floaty next to this game's weightier vehicles, and that sensation is heightened by the tracks' detailed, undulating surfaces. The game strikes a compromise between arcade and simulation handling, which means that while it's almost as easy to drift a front-wheel-drive car as it is a rear-wheel-drive model, every vehicle has its own personality and you'll quickly grow close to a handful of favourites.

Codemasters had a hard act to follow in *Grid*, but with this sequel it's delivered a dazzling package that can proudly take its place among the best racing games of this generation. It not only smooths off nearly all of the awkward edges that have plagued the studio's ongoing attempts to cohere its racing games with driver-focused storylines, but it does so with enough pomp and spectacle to send current-generation hardware off with a memorable bang.

9



ABOVE Night races are particularly beautiful, showcasing the excellent car models as you weave through ever-changing light sources.
RIGHT *Grid 2* provides you with new cars regularly, both won and loaned, ensuring there's variety as you progress through the campaign



BELOW *Grid*'s Flashback feature returns in improved form here, no longer dumping you into a replay but instead rewinding a few seconds in realtime when you hit Y





ABOVE While you're still lavished with attention as the World Series Racing championship's star driver, *Grid 2* is much more about working with your team to put WSR on the map than it is about one driver's progression

Brothers: A Tale Of Two Sons

Brothers: A Tale Of Two Sons was written and directed by Swedish filmmaker Josef Fares, and it's tempting to view this story-focused adventure exclusively through that wide-angle lens. There's certainly a director's eye to the visuals: as well as gorgeous individual moments (when the siblings swim beneath a bridge early on, the camera ducks beneath the stonework, too, picking out shafts of light as the pair lazily float by), Fares tells *Brothers'* story with the aid of economic visual techniques. The camera, for instance, tilts when the pair crest a mountain, letting players pick out their village far in the mist-shrouded distance.

Yet to dismiss this as a filmmaker's dabble with interactive media is unfair. At precisely zero words long – everyone speaks in a nonsensical fantasy tongue – *Brothers'* script relies less on dialogue than the vast majority of games with cinematic ambitions, and the game shows a powerful understanding of environmental storytelling. Meanwhile, those who find 'ludonarrative dissonance' an awkwardly academic term needn't worry, there's none to talk about here. That's probably because Starbreeze wraps a conservative, simple game around Fares' story, a puzzle-platformer with sparingly little of either genre. But even so, at *Brothers'* heart rests a control scheme that understands what it means to communicate meaning through interaction.

Two sticks and two shoulder buttons are all you need to journey through *Brothers*, and that covers you for two protagonists, too. There's something slightly dislocating about not having control of a specific brother at first, since it denies you a singular anchor point to *Brothers'* world, making you a spectator to their relationship, not a participant in it. Then there's the practical consideration. Your fingers may get used to controlling two characters at once, but your eyes will not. Inevitably, you'll get muddled, mistakenly attributing the wrong stick to each brother as they scamper past one another. It's so rare for both brothers to be in direct danger that this isn't really a problem, though, and the unusual control scheme understatedly affirms the close bond between the pair.

It's a little bit too close, perhaps: these brothers are essentially twins. Yes, the younger one can squeeze through tinier gaps, while the older boy's stronger muscles mean he can wrench levers the other can't, but some greater distinction in their movements might have helped underscore the elder brother's protective role. Instead, the younger boy clambers across mountains with the same athletic confidence as the firstborn. *Brothers* is still right not to encumber the pair with too big a set of context-sensitive actions for the sake of drawing distinction, though, since its puzzles are nothing more than gently engaging filler.

Like *Journey*, this quest narrative glorifies the adventure itself, not the challenges encountered along the way. But whereas thatgamecompany's title was built around a core of delightfully flowing movement, Starbreeze's game flows from one novelty to the next, never sticking with a mechanic longer than it takes to build a scene around it. Relatively early on, the older brother must fend off wolves with a burning torch while his younger brother sticks close behind him; two minutes later, he casts the blazing branch to the ground, never to pick one up again. No task in *Brothers* could be honestly described as involved or challenging, but every fresh conceit brings more than just visual novelty to each chapter, and nothing sticks around long enough to become boring – except, perhaps, for the platforming. Clambering up buildings and cliff faces is *Brothers'* crutch, its go-to interaction in a game that wants to immerse you in its world above all. But at times Starbreeze can't quite summon the confidence to give you nothing to do. It's no coincidence that *Brothers'* dullest moments, its switch-and-lever platform puzzles, are also its most typically gamelike.

Something that isn't typical, however, is *Brothers'* marvellous, engrossing sense of pace. Sure, the game doesn't last long – three to four hours, perhaps – and nor is its fantasy world particularly original, though the Scandinavian tinge to the fiction means you'll meet unsettlingly human-looking trolls rather than identikit Tolkienesque monsters along the way. But over its short length, *Brothers* carefully stage-manages a move away from the pastoral, *Fable*-reminiscent early chapters into the realm of the genuinely fantastical. The second half of the game sees the brothers journey through a series of locations that are both visually imaginative and clearly suffused with backstory, yet *Brothers* leaves it up to you to figure out the tale being told, and to make connections to what you've seen before. There's a conjurer's timing to the way the game lures the audience in before unveiling its most magical, mysterious sights, just as there's wise caution to the way it sprinkles a handful of action sequences and dramatic scenes across its relatively brief duration. Perhaps it's down to Fares' influence (though Starbreeze has always been a confident digital storyteller), but *Brothers* understands restraint. And that makes its last half hour all the more effective.

Another entrant in that quietly, confidently expanding genre of games that, rather than build complex challenges around novel mechanics, simply use the existence of interactivity to more deeply immerse you in another world, *Brothers: A Tale Of Two Sons'* quest doesn't quite scale the definition-busting heights of *Journey* or *Dear Esther*. Still, this is a puzzle-platform game pared down to its base essentials, with a sweet, simple tale and an artfully imagined world wrapped around that core.

7

Publisher 505 Games
Developer Starbreeze Studios
Format 360, PC, PS3 (version tested)
Release July

Like Journey, Brothers' quest narrative glorifies the adventure, not the challenges encountered along the way



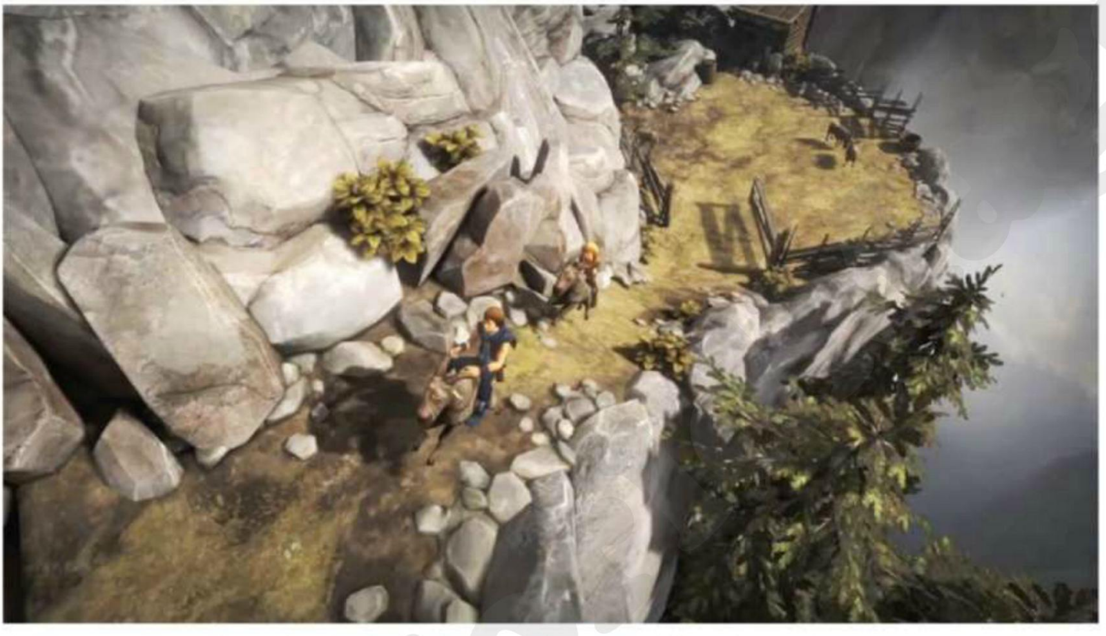
OVERACHIEVER
Tucked away in *Brothers'* world is a handful of side-stories and secrets, almost all linked to Achievements. The game's most shocking scene is one of these optional vignettes, too brief to be accurately described as side-quests. We'll keep that a secret, but an earlier example is covering an albino in soot so that it won't be rejected by its black-furred siblings. Most of these brief side-stories share the game's familial theme, which softens the sense you're going off script by completing them. Still, in a game so concerned with immersion and sense of place, there's something jarring about the extrinsic reward that is the Achievement or Trophy symbol popping up onscreen.





LEFT There's a slightly dreary trudge through some mines early on. The mechanised setting lends itself more easily to dull switch puzzles than any other location

TOP As a quest narrative, *Brothers* frequently uses vehicles or other means of transportation to move the brothers to fresh locations and give you something new to do. The siblings must position themselves carefully to steer this plane. **ABOVE** *Brothers*' frosty final stages are its most memorable, mostly because of the visuals, but also due to the fact they bring in an NPC companion to round out your party



The sweetest moments in *Brothers* are those parts that remind you its pair of stars are just children, such as a giggling journey on two mountain goats

Impossible Road

Publisher Kevin Ng
Developer In-house
Format iOS
Release Out now

Calling it a road isn't really fair. That word calls to mind a strip of drab Tarmac. No, *Impossible Road*'s track more closely resembles a whirling ribbon, gracefully freeze framed in a sea of white. Every few seconds, a shimmer ripples down its surface, giving it a foil-like iridescence. But as palate-cleansing to the eyes as the game's blue-and-white monochrome may look in a screenshot, the experience of guiding a hurtling ball along it is a terrifying prospect.

We can't say *Impossible Road* didn't warn us, boasting about its difficulty in its name. If you shouted four-letter words at your iOS device while playing *Super Hexagon*, you'll be grasping for six-letter epithets to hurl at *Impossible Road*. Echoes of *Wipeout*, *Super Monkey Ball* and *Mario Kart*'s Rainbow Road are inescapable, and the game nods to *Super Hexagon* in its controls, which involve tapping opposing sides of the screen to tilt the field of play and affect the trajectory of the ball (AKA The Vessel).

The game measures your score by how many checkpoints you can make it through before plunging into the abyss. The ingenious twist is that leaping off the road isn't automatic suicide. You keep your forward momentum while falling, and if you manage to guide The Vessel back onto the ribbon within a few seconds, then you can boost your score more rapidly. Simply for the harrowing elegance of this risk-reward proposition, the game's lone developer, Kevin Ng, is surely on the road to fame.

9



Surgeon Simulator 2013

Publisher Bossa Studios
Developer In-house
Format PC
Release Out now

Flinging a patient's intestines around the room can't be very hygienic. Still, we wouldn't want them getting in the way of our plastic spoon, now would we? Inaccuracy defines *Surgeon Simulator 2013*, and we're not just talking about its flimsy grasp of medical science.

This is gaming not as empowerment fantasy or nuanced test of skill, but as slapstick black comedy, the gravity of your life-saving task matched only by your inability to perform it with any modicum of delicacy. Bossa Studios has turned poor controls into an art form, hence the contrived awkwardness of using five keys and a mouse to operate one drunkenly flailing limb and the dully responsive hand at the end of it. You'll grasp in vain at scalpels, drill messily into skulls, and tug roughly at the squishy stuff beneath smashed-up rib cages. The joke works because of the macabre hilarity that ensues when it all goes wrong, and because as deliberately awkward as the controls are, they do work consistently.

The premise hinges on your task being a precise one, and this is where *Surgeon Simulator 2013* can frustrate. The game isn't clear how its surgeries work – which bits need be cut where, and with what tools. It's not a problem when you're merrily and messily experimenting, but annoying if you want to progress. Still, few games take that gulf between what you intend to happen and what actually occurs onscreen and fill it with such comedy.

7



Mario And Donkey Kong: Minis On The Move

Publisher Nintendo
Developer In-house
Format 3DS
Release Out now

How times change. *Minis On The Move* isn't the first time Nintendo's puzzle-based offshoot has debuted on a download service – that honour goes to 2009's *Minis March Again!* – but two or three years ago a game this generous would almost certainly have got the full retail treatment. Instead, it's been given a sensibly priced eShop launch, and has subtly reinvented itself in the process.

The gentle puzzle-platforming of previous games has been replaced by a combination of *Pipe Mania* and *Lemmings*, with your clockwork toys toddling automatically down paths created by tiles you place, twist or slide, collecting tokens on their way to the exit. Mario's Main Event adds pressure by placing falling tiles into a pipe that explodes if allowed to overflow, while Many Mini Mayhem tasks you with guiding multiple toys by sliding pieces and rotating pivots. Puzzle Palace is the pick of the bunch, prizing a slower, more considered approach by giving you a limited supply of tiles to create a route to the finish. Finally, Giant Jungle escapes the single-screen confines of the other three modes to offer a fearsome, expansive challenge.

A stage editor and a suite of minigames fill out a substantial package, a destructive riff on the late Kenji Eno's *You, Me, And The Cubes* the highlight of the latter. Only a sense of familiarity dogs an otherwise engaging diversion: the Minis cover a lot of ground in these 180 levels, but at times it's well-worn territory they're walking.

7





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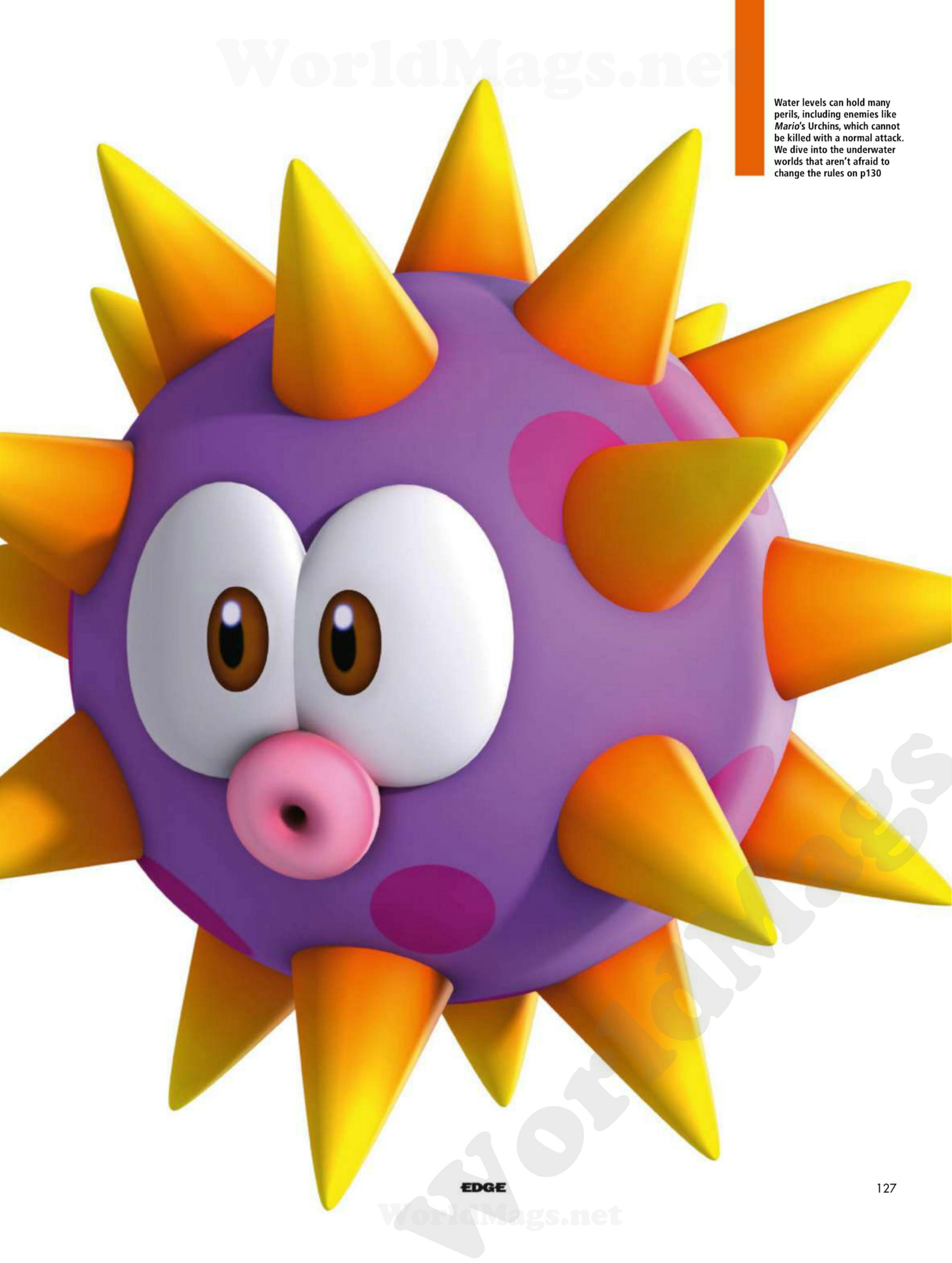
create

Lifting the lid on the art, science and business of making games

This issue's People, Places, Things starts with a climax on p128, where we ask Douglas Wilson – the man behind *Dark Room Sex Game* and *Johann Sebastian Joust* – how he's managed to subvert mainstream motion control. Then we dip a toe into the vast sea of water levels on p130 and learn how a simple fluid can wash away all of gaming's accepted rules. *Dead Space*'s workmanlike Plasma Cutter defines its host series, and we cut to the heart of why it's so effective on p132. After which it's time to ghillie up and infiltrate *Call Of Duty* custodian Infinity Ward in our Studio Profile on p134, where we discover how the studio has reformed after the staff exodus during *Modern Warfare 3* to be fighting fit for *Ghosts*. The Making Of... on p138 tells the story of how one man gathered a new group of friends around *Thomas Was Alone*, a 2D platformer with wonderfully three-dimensional characters. Our columnists provide some final thoughts, with designer Tadhg Kelly (p142) explaining that mechanics – such as scoring and winning – are an important part of games and should not be dismissed, and Clint Hocking (p144) trying to imagine what a modern triple-A console title without a reliance on killing and death might look like. Randy Smith (p146) lays out the three levels of game creation, and why we need game artists as well as directors and designers, and finally James Leach (p148) passionately conveys how love has no place in videogames if the player can't control their virtual relationships.



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Water levels can hold many perils, including enemies like *Mario*'s Urchins, which cannot be killed with a normal attack. We dive into the underwater worlds that aren't afraid to change the rules on p130



People

DOUGLAS WILSON

Meet the mind behind Johann Sebastian Joust

Wilson combines an academic, an indie, and a computer scientist. But he's best known as a designer who's interested in folk videogames that bring people together

There aren't many designers who'd consider creating a videogame that doesn't require a screen. Fewer would hope to see such a game published on a console. Yet when Die Gute Fabrik's *Sportsfriends*, a collection of local multiplayer games, debuts on PSN later this year, academic and indie designer **Douglas Wilson** will have achieved just that. His *Johann Sebastian Joust* repurposes the Move controller to allow people to face off in playful combat. The rules are simple: players must keep their own controller stable while knocking those of others. The result is a slow-motion kung fu match that's as entertaining for spectators as it is for participants.

Joust is only the latest in a procession of games Wilson's been involved with that use gaming hardware for public, spectator-friendly games. *Brutally Unfair Tactics Totally OK Now* (AKA *BUTTON*) had players crawling along the floor and pushing each other out of the way as they tried to reach their controller's button first. And *Mega GIRP* takes Bennett Foddy's *GIRP* and has the player control it with their body across four dance pads. "*GIRP* had been described as Twister for your fingers," says Wilson, "so I was like, 'What if it was [more like] Twister?' It was about, 'How can we take a preexisting game and make it more spectator friendly?'"

Wilson sees motion controllers as suited to achieving something like slapstick comedy with games. Not for what they allow players to do on the screen, but for what players do in reality. "To me, it's weird that we are going to do these ridiculous things with motion controllers in order to focus on the world behind the screen," he says. "Sony has these really terrible ads for the Move controller featuring some dude with a holographic bow, and it's taking itself so seriously. But to me it's the opposite… and that's because if you are running a physical control game, half the fun is what is happening in front of the screen."

"If you are running a physical control game, half the fun is what is happening in front of the screen"

Wilson's approach to play derives from the mingling of his interests. In addition to being an integral member of the indie scene, he's also an accomplished academic. He's an American now based in New York, but spent five years in Copenhagen, where he was a PhD student at the IT University Of Copenhagen (ITU) and a founder of the Copenhagen Games Collective. He also continues to be a partner at Die Gute Fabrik.

He didn't set out to build such a wonderfully scattershot CV. He started college on a computer science major at Stanford University, but then took a game studies course with Henry Lowood.

Lowood's class was an eye opener for Wilson. "It was games not from a programming angle, but from a humanistic one, with history and culture. I had grown up doing a lot of writing, so even though I thought I was going to do science, I had this whole humanistic background… I was like, 'Whoa, you can study games seriously like this?' I don't know why that had never occurred to me before." Wilson moved to a game studies major, but continued with his computer science Masters.

It didn't take long for the two to merge. In 2007, as part of a capstone class for his Masters, he worked with a team on *Euclidean Crisis*, a multiplayer RTS played on giant touchscreens with styluses and voice control. It went on to be a finalist in the IGF Student showcase. "It was like, 'OK, I have this computer science background, I guess I can actually make these things.'"

Largely inspired by a desire to travel overseas, Wilson applied for a research grant in 2007 to attend ITU in Denmark. "I went thinking it would be fun for a year, and then I'll go back [to the US] and do my PhD."

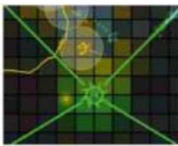
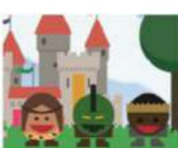
Instead, he formed social networks in Copenhagen that would make it difficult to leave. At the 2008 Nordic Game Jam, Wilson worked on an unorthodox title called *Dark Room Sex Game*, a party game without visuals that asked players to match rhythms in order to reach a joint climax. "It was originally a keyboard game," explains Wilson. "But then we were like, 'Wouldn't it be funny if we added Wii Remote support?' So we hacked it in and that was really the beginning of what would become my shtick for the next few years."

Wilson stayed on at ITU to start his PhD in 2009, and became increasingly interested in the way that people interact and look at each other when a videogame has no visual component. "Which is stupid, right? We are used to looking at each other when we play sports and boardgames, but it feels stupid when you are holding a videogame controller."

Around that time, Wilson co-founded the Copenhagen Game Collective, a network of designers and artists who collaborate on projects and exhibits. It was with the Collective that he took the ideas behind *Dark Room Sex Game* and made them more accessible for *BUTTON*.

CV

URL www.doougle.net
Selected Softography *Euclidean Crisis* (2007), *5 Minute MMORPG* (2009), *Brutally Unfair Tactics Totally OK Now* (2010), *Johann Sebastian Joust* (2013)



But it is Wilson's most recent work with *Johann Sebastian Joust* that has turned the most heads, becoming a staple at parties and exhibitions across the world, and winning the Innovation Award at GDC 2012. One of the biggest draws, Wilson thinks, is the pleasure in subversion. "When you see *Joust*, half the fun is, 'Oh my God, they're using a Move controller to do this?!' I think if I had done *Joust* with special research technology and made the exact same thing, I don't think it would have quite the same valence."

Now back in New York after completing his PhD last year, Wilson is unsure what the future holds, and whether he will dip back into his academic side. "I would like to get back to academia at some point," he says, "but the job market is totally brutal, so who knows? On one hand, I don't know if academia is even feasible, but I don't know if the indie thing is feasible either, so it might turn out to be neither."

One thing he knows for certain, though, is that he wants to begin exploring new technologies and design ideas. "You don't want to be the Move Controller Guy," he says. "It just happens to be the technology that I can use easily and fast, but you gotta branch out and do new stuff."

One project he is working on now is *Mutazione* with Nils Deneken. Wilson describes it as a well-illustrated and story-rich singleplayer adventure game. "I grew up playing JRPGs and adventure games, so there is this weird other half of me that's really interested in that kind of space. I don't have much of a background making that kind of stuff, but I'd love to try my hand at it."

Perhaps, then, what ultimately brings together the many different strands of Wilson's approach to game design is an insatiable curiosity to understand how we play – together, with technology, and alone. ■



Places

WATER LEVELS

Why Adam's ale holds the power to dissolve gaming's rules

Mario's ice powers are applied differently to water depending on the series. *New Super Mario Bros* treats them like chilly Fire Flowers, while *Galaxy* has water freeze solid under Ice Mario's feet

Fire levels, as we discussed last month, are about pushing players to their limits, testing their skills by covering portions of the game world in lava and flame. By contrast, water levels are about changing the rules completely. Mario might have bounded his way through the opening levels and the first fiery castle of the Mushroom Kingdom, but the solid ground was pulled from beneath players' feet when they entered a warp pipe at the start of World 2-2 and found themselves dunked unceremoniously in *Super Mario Bros*' dark blue brine.

Water levels are now clichéd, but it's easy to forget just what a twist this represented. *Super Mario Bros* is a platform game, but it's a physics sim at heart. Weight, inertia, acceleration: you learn how these things work in Mario's world if you want to succeed. And while the game's ocean might be lacking fully simulated fluid dynamics and procedurally rolling waves, it did an excellent job of rewriting the rules.



***Uncharted 3*'s ship graveyard changed the rules of engagement, messing with your footing and making you swim vulnerably**

Water slowed Mario down, but it also let him resist the insistent tug of gravity. A fluffed jump back on land could send you hurtling to a quick death, while here Mario could float indefinitely with taps of A. Level furniture normally offered solid, reliable safety, but under the sea Mario's task was to thread a route between all the walls, Bloopers, Cheep-Cheeps and luridly pink corals.

Mario's initial dives established expectations for how underwater segments should function in a platform game. Even speedy Sonic begrudgingly let water slow him down for levels focused on door-and-switch puzzling unsuited to his normal fizzing pace.

There's a conservative aspect to these early water levels, as if level designers had realised the novelty of H_2O, but not quite mastered the art of it. Water offered 360 degrees of movement, yet Mario and Sonic's dips rarely took advantage of it, insisting on a left-to-right journey through levels that looked like flooded versions of what you'd find above the waves.

If Mario hadn't had his fill of water levels in two dimensions, then Nintendo dived in fully on adding a third one. *Mario 64*'s first water level – Jolly Roger Bay – was an astonishing reveal, the opposite to World 2-2's fairground dunking. This time, players were dropped off at the edge of a subterranean lake to discover for themselves that almost the entirety of this level existed beneath the still surface of the water. The series' switch to nonlinear open environments was ideally suited to the intoxicating freedom of movement provided by swimming through a 3D space.

Meanwhile, Lara Croft had been making similar discoveries about the potential of leaving dry land behind in these early 3D worlds. But where *Mario 64*'s water levels were showcases, hers were gauntlets of tight corridors that seemed to deliberately invoke the sense of disorientation that moving in 3D could cause. Even when they opened out, Lara's water levels were panic-inducing: *Tomb Raider 2*'s 40 Fathoms, which takes place straight after a submarine crash, handed you control of a Lara suspended in a cavernous void with no means of judging where the surface was. *Metal Gear Solid 2* would take this style of disorienting water level to extreme: Raiden's journey through the flooded Big Shell presents a discombobulating mess of bubble-packed corridors where limited visibility combines with uprighted level furniture to leave you lost.

> Raiden's journey through a flooded Big Shell is a discombobulating mess of bubble-packed corridors

True water physics were some way off, but in these early days Nintendo's level designers played with the notion that water can flow in and out of a space. *Mario 64*'s Wet-Dry World, with its changing water levels, was an effective wet-dry run for *Ocarina Of Time*'s Water Temple, which is perhaps the most terrifyingly complex water level of all. The Water Temple is a intricate 3D puzzle built around the way water can transform a space. It's effectively multiple dungeons at once, all flooded to various degrees, and progressing through this aquatic shrine requires you to hold in your head every waterlogged form the temple can take, moving through one version of the space in order to position yourself for its next spatial shift.

In a sense, the Water Temple is the conceptual opposite of Rapture. The great irony of *BioShock*'s setting is that it's not a water level at all – the ocean's a dramatic device, not a gameplay one. And when it does turn up, water is used much like fire is in modern games: to corral you into running in a panic towards your next objective.

BioShock did this because water's ability to transform games isn't as welcome in an era where triple-A games are expected to hone in on central mechanics and provide constant variations upon them. *BioShock*'s core loop wouldn't work when submersed. It took Naughty Dog three games to work up the courage for a swim, and *Uncharted 3*'s flooded cargo ship is nothing more than a brisk, heavily directed escape sequence. There are exceptions: *Hydrophobia* attempted to build an entire game around accurately simulated water, but it was a bog-standard shooter that failed to do anything interesting with its own tech.

Water levels are very different to the style of game surrounding them – they're panicky and claustrophobic, head-scratchingly 3D or weighed down with the burden of underwater controls. Many studios, it seems, would rather stick to dry land than risk a damp squib. But we remember water levels because of their differences. Perhaps more games should take the plunge. ■



Things

PLASMA CUTTER

Isaac Clarke's signature weapon slices right to the heart of Dead Space

While most other games would make a basic pistol your default weapon, *Dead Space* offers you a versatile tool that's fictionally coherent and remains a useful part of your arsenal to the end

edge.co/32671w
Unedited interview and NG videos

From *Dead Space* series
Developer Visceral Games
Origin US
Debut 2008


The Plasma Cutter is best used in combination with Clarke's Stasis powers, giving him time to make cuts with surgical precision

Few weapons work as hard as Isaac Clarke's Plasma Cutter, but then it was built for work. Clarke's primary defence against the razor-limbed advances of his necromorph enemies is a repurposed mining tool. It's a functional device that doesn't just cut minerals out of space rock, but also welds together *Dead Space*'s vision of the future, which encompasses a lived-in sci-fi aesthetic and the notion of mechanic as hero.

It's a future of industry and practicality. Clarke's task – the one from which he's diverted by the matter of surviving a legion of reanimated horrors – is to repair a deep-space mining ship, the USG Ishimura. Our hero remains wordless throughout, and mostly faceless until the final scene, his mend-and-move-on actions doing all the talking, and his character encapsulated by his rugged engineering suit. Like Ridley Scott's Alien, *Dead Space* paints the big black as a blue-collar frontier.

Into this world comes the Plasma Cutter, although not straight away. When he boards the Ishimura, following a botched landing, Clarke is weaponless – he is, after all, an engineer. This not only makes navigating the first ominously empty rooms a tense exercise, but destabilises our offensive expectations within a familiar thirdperson horror scenario. By the time a scythe-armed body-collage has chased him into an elevator, the lack of a weapon has instilled an itchy panic. 'There must be something,' you think, scouring the surroundings. 'Anything. Ah!'

The Plasma Cutter's entrance is marked by a kind of shrine: the corpse of a victim propped up against a work bench with the tool resting by his side. On the wall, scrawled in blood, is a message: "Cut off their limbs." This instruction is reinforced by a voice log found a corridor away: "This is Benson, tram engineering. We think we've figured it out. Smith killed one! Listen, forget about shooting 'em in the body, you gotta cut off the limbs. Grab a cutter, anything like that. Cut 'em apart."

This is the key to the Plasma Cutter: it is an improvised weapon – the deep-space equivalent of the hastily snatched kitchen knife – and, well, it cuts. In addition to striking a harmonious chord with the game's practical futurism, this also makes the weapon central to its major gameplay stroke. The game's executive producer, **Glen Schofield** (whose name is given to the fictional manufacturer of the Plasma Cutter), describes 'strategic dismemberment' as "the primary theme of *Dead Space*". His team was openly inspired by Japanese survival horror, and in particular *Resident Evil 4*. The Plasma Cutter replicates that game's over-the-shoulder gunplay, but dismemberment gives it something new. We're not in the worn world of headshots and zombies, we're in a new workshop of precision craft and tidy trimming.

Crucial to this precision is the tool's major feature, the rotating cuff that alternates the cutting angle between horizontal and vertical. Looking down the sights, switching from one to the other is quick and efficient, the three beams revolving 90 degrees with a burble. It gives the weapon a utilitarian feel in the manner of an adjustable wrench, while also proving useful for combat amputations. The legs come off with a horizontal bolt to the thigh; the arms are removed with a vertical bolt above the elbow.

We're not in the worn world of headshots and zombies, we're in a new workshop of precision craft

Combat with the Plasma Cutter is marked by deliberation over angles of incision, and also by a search for efficiency. You seek to minimise the number of shots needed to take off each limb, and to kill each charging tangle of parts. It's a compelling game-within-a-game, one that comes with its own rhythms (leg, leg, switch, arm), the unexpected punch of the plasma fire popping the necromorph bodies at their weakest points.

This urge for efficiency kicks in before scarce ammunition on higher difficulty levels makes it a necessity. But even on punishing settings, the Plasma Cutter holds its own. A natural extension of *Dead Space*'s comprehensively conceived factory future is the Bench, the workstations through which Clarke upgrades his arsenal. Like *Halo*'s scoped pistol, the Plasma Cutter is a starter gun designed to defy discardable default weapon expectations, but the Bench means it goes further still. *Dead Space* is built in such a way that the Plasma Cutter is the only weapon you'll need after you've boosted its damage, rate of fire and clip size, as recognised in the One Gun achievement.

There's a purity to making a run through the game using a single weapon that echoes *Dead Space*'s wider style and sense of purpose. The required ammo conservation, strategic focus and maximised damage feel somehow like natural extensions of its holographic interface and industrial elegance. There is a tight aesthetic cohesion here, centred on and characterised by the Plasma Cutter, and such is its strength that it remains at the heart of the series even as the sequels stray into generic action territory in search of greater audience sizes.

So it's no surprise to see the Plasma Cutter return in *Dead Space 2*, its improvisational qualities played up as Clarke hastily jury-rigs one from a flashlight and medical laser. Equally, the worst of *Dead Space 3*'s sins is blunting the Cutter's effectiveness when stacked against a surplus of tediously conventional custom weapons. By this stage of the series, of course, Clarke is talking, crying, and shouting. He's still fixing, too, but that purity of purpose and sleek minimalism – everything that the Plasma Cutter embodies – is diluted, and *Dead Space 3* is the poorer for it. ■



STUDIO PROFILE

Infinity Ward

How the house of COD was rebuilt after its foundations crumbled

Head of production Steve Ackrich (left) and executive producer Mark Rubin managed the fallout of the West-Zampella dismissal, and have now rehoused Infinity Ward in Burbank

There's a common assumption online that Infinity Ward no longer exists, that the team behind *Call Of Duty 2* and the *Modern Warfare* games walked out in mid-2010, took a cab a few miles down the road and founded Respawn Entertainment. This, says head of production **Steve Ackrich**, is not the case.

"We lost some exceptionally talented people, there's no denying that," he says. "But this is Infinity Ward; Infinity Ward is here in this building. Yes, we lost some talented people, but in a number of different ways we brought new life and new blood into the studio to try new things."

Infinity Ward was founded in 2002 by Vince Zampella, Jason West, Grant Collier and 19 other refugees from *Medal Of Honor: Allied Assault* developer 2015, Inc, but the new Infinity Ward's story really begins on March 1, 2010, when Zampella and West were dismissed by Activision for breach of contract. A fair rate of staff turnover is normal at a developer employing well over 100 people, but by the end of May some 46 employees had followed the pair of studio heads out the door. *Modern Warfare 3* had been in development for about six months and the effect on production was dramatic.

"It was a confusing time," says executive producer **Mark Rubin**. "It was a lawyer thing, and lawyers were doing their lawyer business, and for us it was just confusion. There was a period of coming to grips with and understanding what was going on. We didn't expect to lose as many as we did, but we had a significant number of people who stayed as well."

"We didn't expect to lose as many as we did, but we had a significant number of people who stayed"

Allegations of spying and hacking by Activision gave everyone reason to leave, and job offers from Respawn gave many an even better motive to walk away from the studio, but still over half of its employees stayed put. "Everybody was figuring out for themselves where they wanted to go," says Rubin. "For some, there was a strong sense that *Call Of Duty* was the reason they came to Infinity Ward, and that was something they didn't want to give up on. Some people, right from the beginning, knew how they were going to handle the situation. For others, it was a bit more internal struggle, and so we had a significant number of people leave.

"For those who stayed, you could see a change in attitude as everyone said, 'OK, this is a business thing, we're not going to try to speculate too much; let's get back to making games.' Even with that distraction, we had to make a game, and for a lot of us that became our lifeline."



***Call Of Duty 2*'s post-launch event was hosted at a Net café. *Modern Warfare 3*'s COD XP event was hosted in a hangar**

Infinity Ward was left with a team of just over 50, including many of the leads and even the studio's first-ever recruit. Steve Ackrich and CTO Steve Pearce took over the running of the studio and recruitment began almost immediately, but Infinity Ward lacked the manpower to make *Modern Warfare 3* in time for its November 2011 release. Activision turned to Sledgehammer Games, which abandoned an in-progress *COD* adventure game to help finish *Modern Warfare 3*.

"Never having done multistudio development before," says Rubin, "production had some challenges: working out how schedules were going to work, who was going to talk to whom. Just that basic, really. We ended up doing a lot of flights. We had a lot of guys who basically were on chat programs all day long, and we also had some guys who Skyped all day with their counterparts at the other studio. We struggled in the beginning to find our footing with the two studios, but once that picked up it actually ran really smoothly. It was a surprise."

By October 2010, the studio was back up to something resembling full strength, but recruitment continues to this day. Rubin and Ackrich call Infinity Ward a 'studio of leads'; developers in management positions at other studios have joined the team in subordinate roles, apparently just to work on the next *Call Of Duty*. "It's definitely not for the irresistible pay cheque," says Ackrich, laughing. "A lot of our guys have put their heart and soul into projects that haven't got this much attention. I think *COD* is a chance to have their efforts recognised."

The new Infinity Ward – half new at least – moved from Encino to Burbank, California, in January this year. The studio space was built to sketches and specifications chosen by Rubin and Ackrich, and little expense was spared. It's a colossal space, all grey concrete and white plaster; the receptionist occupies a lobby 50ft or more from the nearest work area, and developers in a hurry commute from office to office on folding scooters. "In part, we moved here because of our growth in staff," says Rubin. We've gone from about 60 on *COD2* to about 125 now, but it's also because if everyone plugged in their devices at the old place, we'd lose our power."



Founded 2002
Employees 125
Key staff Mark Rubin (executive producer), Steve Ackrich (head of production), Steve Pearce (CTO)
URL www.infinityward.com
Selected softography *Call Of Duty 2, COD: Modern Warfare, COD: MW2, COD: MW3*
Current projects *Call Of Duty: Ghosts*

Rubin would have liked to lose the pillars supporting the ceiling in the meeting area, but at $250,000 per column, he figured they could stay. The communal hub is surrounded by individual rooms for the singleplayer team, multiplayer team, programmers, and artists; a 10ft graphic of Price from *Modern Warfare* stares down on every meeting; and the space receives a direct video feed from the testing lab, where visitors play new builds of Infinity Ward's current work in progress, *Call Of Duty: Ghosts*.

"[When we moved,] we allowed every department to set themselves up how they liked," Rubin explains. "So the multiplayer guys have one big room, because for them there's a lot of talk and debate, but other guys need more heads-down time. The singleplayer guys are all in two-person offices; most of the coders are in two- and one-person offices. We funnel people through the same central area and meetings happen naturally. It works for us."

Since Infinity Ward is a 'studio of leads', everyone can be trusted to manage their own time. Which means that Infinity Ward's team makes its own hours, explains Ackrich. "If you impose a certain schedule, people become resentful of that. They understand, as studio leads who have built games before, how to hit milestones and hit game quality. But they also have to manage their life. We leave it to each person to determine how they're going to do all the work they need to do to get the game done."





Call Of Duty 4: Modern Warfare (above) is arguably the most influential game of the current generation. Its multiplayer template – perks, levelling and customisable loudouts – has been widely copied, and it was first with the set-piece-laden, five-hour blockbuster campaign, too

It makes sense, then, that when work began on *Ghosts*, Infinity Ward did what it has always done and took input from its experienced team. "We put up boards on the wall," says Rubin, "and everyone writes up all their ideas for little features and big features on cards. The teams then start to go through and review each of those cards – 'There's no way you can do that,' or, 'This idea doesn't work with this other idea' – and gradually the cards start to disappear."

And while *Call Of Duty* has become a shorthand reference to some for the kind of focus-grouped, tested-to-death games that so many players affect to hate, Rubin insists the approach to development is the same today as it was back on *Call Of Duty 2*. "We started making these games long before we had 30 million people playing," he says. "We made what we wanted, which was a small arena shooter that was fast paced, felt good, and had a bit of an RPG element to it. We're still making the game everyone wants to make, but it just so happens the game became the popular thing it is."

The cards and ideas board might have survived since *COD2*, but *Ghosts* is like no game Infinity Ward has ever made. For the first time, the studio is working with scalable assets initially rendered at what the studio calls "cinema quality". **Jake Rowell**, a character artist with 20 years of Hollywood movie experience behind him, explains to us how, for most games, you'd build a chair from simple shapes and a recyclable leather texture that fits the demands of the art budget. For *Ghosts*, the team will instead build a chair model with a colossal polygon count to capture the smallest of details, then scale it down to game quality. It's a process that Rubin describes as "artist intensive", and it might be hard at first to see the point. It means that the studio has versions to fit different platforms' specs, of course, but all the time the studio is banking highly detailed assets that will still be useful a decade from now.

"I think the first big mindset change for us was realising that the more we can do to future-proof against transitions, the better," says Rubin. "We're not trying to make a game for the next gen or the current gen. We're trying to make a game for the gen after that. That's different from the past, where we wanted to be platform agnostic; we wanted a game that was the same on every platform. What we've done now is create a game that's going to look great on every platform individually."

Infinity Ward's revamped engine is built to be just as scalable. Fragments of the old code remain, but it's so different that the studio's calling it a new engine. "Everything from the animation systems to art pipeline systems to the way voiceover and sound work to UI and tools have changed," says Ackrich. "Every aspect of it has gone through a total rework while maintaining development so people could stay productive. Next-gen systems are a moving target, so it was important for us to be able to scale to whatever that hardware is capable of."

> "We're not trying to make a game for the next gen. We're trying to make a game for the gen after that"

The trauma of Infinity Ward's two great transitions – the leap from PC to console, and the loss of so many people so suddenly – has defined the studio's ethos, and it seems that safeguarding against unpredictability is precious to Rubin. "*COD2* was our first console game and it was a significant learning experience for the studio," he explains. "From our perspective, we're looking at doing the same thing we did with 360 on the next gen. We're looking at blowing everyone's socks off and being the game that drives console sales."

There's no doubting *Call Of Duty* has that power, but its rebirth has meant a drastic change in the studio's culture. "One of the PR guys called us the Howard Hughes of game development," says Rubin. "We had always been insular. Nobody knew anything about us, no one knew how we worked, we never did GDC talks, we never opened the doors. That's another one of the things that's changed. We realise people are interested in what we're doing here and we realise there are fans who want to hear about what's going on."

"[In the past,] the studio listened but didn't actually respond," explains Ackrich. "We had one spokesperson [Robert Bowling], and that was the only face anyone saw, so it was information through a straw. It's a huge community and we've been wrestling with how to let them know we're listening, and then how to respond to them when we do something based on what they said."

"We tap [Activision's other studios] for their expertise pretty regularly now, too," says Rubin. "It's something we've got much better at. With what happened [with *Modern Warfare 3*], with bringing in Sledgehammer, that forced the studio to reach out in a way we never have before. A lot of the guys have worked here for so long that I know their opinion on any given topic, but you bring in a new studio and now you get some cool, unexpected things going into the game. In that sense, it was actually a really fun and enjoyable experience."

In almost every other sense, it wasn't. "[*Ghosts*] is almost the hardest game I've ever had to work on, just because of the added generational requirements," says Rubin. "But the last game was definitely harder than this one. So, you know, even a console transition wasn't as hard on us as the last game."

Still, the doubters will continue to doubt, and Ackrich doesn't have an answer for them at the moment. "It's not a matter of what we would say to them; there's nothing we can say. We have to prove it, we have to continue putting out great games. In every discipline, we've hired some exceptional people – some great engineers across the industry, some great visual effects guys who came from across Hollywood, some strong designers who have shown their value in other studios. In every discipline we've brought on great talent. We've done all we can, and now it comes out in the games." ■

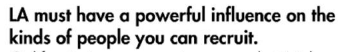


Q&A

Mark Rubin
Executive producer

Mark Rubin is now the public face of Infinity Ward's *Call Of Duty* games. He's lived them since *COD2*, his Twitter feed is devoted to them, he's one voice the community looks to for announcements about them, and he was the one responsible for reaching out to Sledgehammer in order to keep *Modern Warfare 3* alive. With *Ghosts* now out in the open, we ask him about the expertise and technology that's going into making the game, and about the future-proofing that will support the series well into the next generation.

How have your recruits from the movie business helped with *Ghosts*?
We're just now looking at being able to do realtime subdividing [a technique that adds curves to angular models when viewed up close] in games, and having guys who have worked in cinema for years has been a huge benefit for us, especially doing a console generation change. Their experience in non-realtime rendering is extremely useful. They've been doing sub-D for years. We have two artists who have worked together on movies for 20 years, and we have another guy who just started recently in the special effects industry in Hollywood. There's this whole level of talent that's already out there that's entirely untapped from our perspective. We're lucky to be in LA so we can get access to these guys early.



LA must have a powerful influence on the kinds of people you can recruit.
California taxes are outrageous, but LA has anything you could ever need for game development, and it has the highest quality of those things. Getting a voice actor is easy, obviously, but then we also have the mo-cap studios and the sound-recording studios right on our doorstep, so we can be more hands-on with those processes. There are some good studios in the area that we can pull from, too, and the weather is nice, so it's easy to get Canadians and Brits down here. I think we have eight to ten people from the UK. That's a lot of the attraction for people. It's hard to find a better city to want to work in.

How did you shift your teams onto the new engine and over to HD assets?
It was already kind of happening; even on *Modern Warfare 3* with high-quality faces on the characters. After that, one of the first things we did was produce a target render of a diner to get a picture of where we wanted to be from a density and polygon size and texture standpoint. That gave all our engineers a really straightforward [and] easy list of tasks to start with straight away, and they just started going right into it, pulling the engine apart. By producing cinema-quality content without worrying about hardware before that hardware exists, we were able to get a huge head start. Literally a month ago, a huge chunk of lighting technology went into the engine and all the content we had created was ready for it. We can build content and build the engine at the same time, have them coexist, and we're still able to make the game in two years.





Infinity Ward's dining area (above) connects to a meeting room in the centre of its colossal studio space that doubles as a multiplayer testing lounge



THE MAKING OF…

Thomas Was Alone

The indie game that gave blocks real personality wouldn't be here if it hadn't won its own cast of friends along the way

Thomas Was Alone began life as *Two Friends*, but Bithell quickly realised he needed a bigger cast of characters to suit the collaborative mechanics

Format Mac, PC, PS3, Vita
Developer Mike Bithell
Publisher In-house
Origin UK
Debut 2012

Mike Bithell was alone. It was the ninth weekend in a row he'd spent at his computer coding his new game. Or was it the tenth weekend? It didn't really matter, because each week had become the same. "I was working in London with a 40-minute commute," he remembers. "I'd get home about 7:30 each night, do two hours' work on the game, then go to bed. At weekends, my girlfriend would make up a lot of excuses about why I couldn't come out to the pub."

Ironically, the game he was coding is all about friendship. Its titular hero is a lonely red rectangle who teams up with a bunch of other brightly coloured quadrilaterals to escape from levels full of water, traps and spikes. It's a charming 2D platform-puzzler designed around cooperation, self-discovery and love.

Thomas Was Alone started life in 2010 as a Flash game. While working as a designer at Blitz Games, Bithell saw the explosion that was happening in the indie scene and was inspired. "I'd been in the game industry for about three years. I was a guy making stuff in a big team, and that story of one or two people making something on their own was very attractive."

He started brainstorming ideas. Watching the Coen Brothers' O Brother, Where Art Thou? sparked an idea for a platformer about two characters chained together like escaped convicts. There was another idea about a big hole that you had to stack characters to get out of. And then there was his love of Bauhaus, mid-century modernism and minimalism. It all coalesced when he sat down one weekend for a personal 24-hour game jam.

Uploaded to gaming portal Kongregate, *Thomas Was Alone* quickly racked up 100,000 plays. "A switch flipped for me," says Bithell. "Even though I was working in the industry, I saw games as a closed shop. I thought you couldn't get people to play your game if you didn't have a massive marketing team or lots of money." In a sudden epiphany, he realised that was wrong: "It was a fantastic mix of optimism and stupidity."

Thomas Was Alone was born in Flash, but it came of age in Unity. Bithell began work on the bigger, better version of his prototype in early 2011. He'd changed jobs, moving down to London to work as a design lead at Bossa Studios. His new employer had given the 27-year-old the unusual freedom to work on *Thomas Was Alone* in his own time without demanding to take ownership of it, as many other studios would.



In its early builds, *Thomas Was Alone* didn't have the rich colour palette or deep backgrounds that would enliven the final game

His bosses knew he was making a game, but Bithell saw it as a process of learning more than one of development. "I'd never coded a full game before. The original *Thomas Was Alone* prototype was the most complex thing I'd ever built, and that was really simple. So I had to teach myself coding. Ironically, the development folder for *Thomas Was Alone* on my computer is called Teaching Myself Unity. For posterity, that's what it will always be called."

Unity represented a huge jump from Flash. By chance, though, the inaugural meeting of the London Unity User Group was held three weeks after Bithell started working at Bossa Studios. Its first talk focused on how to make a 2D game in Unity. And so Bithell found himself alone, coding in evenings and weekends.

> "I'd never coded a full game before. The original prototype was the most complex thing I'd ever built"

Facing up to the constraints of his coding know-how, Bithell decided to make a virtue out of his limitations. He used the middleware component iTween for the game's animations, but realised he had to keep his characters simple. "I knew I couldn't do character art in terms of motion-captured characters jumping around. I knew, from both a technical point of view and a game design point of view, that the game falls down if they're not rectangular. Literally, characters wouldn't be able to stack properly."

So he set out to make the best quadrilaterals he could. Quickly, his research brought him into contact with the work of Dutch painter Piet Mondrian, whose 'neo-plasticism' canvases obsessively meditated on primary-coloured rectangles and squares embedded in grid-like compositions. They were the perfect visual reference for *Thomas Was Alone*'s characters.

Armed with a colour palette by his friend Daz Watford, Bithell found the game evolving in unexpected ways as he paid more attention to the ratio of composition, colour, shape and scale. "The original prototype was a game about squares," he explains. "The final game is a game about characters who happen to be square."

There aren't many games that can make you care about a bunch of geometric shapes; they don't have eyes, or faces, or expressions. And yet in *Thomas Was Alone*, they have personalities. Take Thomas, the hero, an observational little chap who's inquisitive about the world. Or Claire, the blue square who's convinced she's a superhero because she can swim.

Bithell is certain that his game design isn't what secured *Thomas Was Alone*'s success. "I don't think it is the strength of the game, which is a shame, because that's the main bit I did. I think it's competent. Competent in the actual sense, not the derogatory sense. It's a good game made much better by the storytelling and everything that plugs into that storytelling."

Just as *Bastion* is given an extra dimension by its narration, *Thomas Was Alone* is transformed by Bithell's script. Tonally, his inspiration was the conversational style of British comedian **Danny Wallace**, and he spent a Christmas locked away in a room with Wallace's audio books. "For me, he's the great pub storyteller," says Bithell. "He just pulls you along on a story."

Finding the right voice actor to breathe life into the lines proved impossible, though. The story – about artificial intelligences unleashed inside a computer mainframe due to a programming glitch – needed warmth to work. Despairing, Bithell approached the comedian directly. After all, if you're looking for a Danny Wallace type, there's one person who's best placed to nail that.

"Well, I'd definitely put myself in the top three," laughs the comedian. A former game journalist and occasional voice performer in the *Assassin's Creed* franchise, Wallace remembers being instantly taken with Bithell's opening email. "He'd had a couple of drinks, I think. I'd had a couple of drinks and he sent me this really well-written email. Immediately I felt like he was talking to me, and there was some warmth to the way he was writing."

Intrigued, Wallace fired up the accompanying build of the game and was charmed by the colourful blocks. "It was magical and unusual," he remembers. "When you first see a screenshot of it, you can forgive doubters online for going, 'What

the Hell is that? It's just a block jumping over a thing!' But when you see it move and you feel the world, the game feels much more fully formed than just a simple screenshot might imply. My job was to try to make you care about these blocks as if they were real people. But they already felt like they were real to me, really, just in terms of that world that Mike created so brilliantly."

From Bithell's perspective, Wallace's involvement was just another piece of remarkable good fortune. The comedian, who'd go on to win a BAFTA for his performance as the game's narrator, joined the ranks of people who'd gone out of their way to help the one-man outfit.

"A big part of making *Thomas Was Alone* has been the kindness of strangers," Bithell says. "Things like [game designer] Eric Chahi talking about *Thomas Was Alone* in interviews just because he liked it and wanted to help out. Side, who did the voiceover recording, helping me out and making sure I could get into the studio at a reasonable price. These are the guys who do *Assassin's Creed*. They didn't have to do that, but they did. [And] the guys at Audiomotion, who did this awesome April Fools' Day trailer for the game. So many people have helped out – my previous employers, who let me develop a multiplatform game in my spare time. Not many studios would have been cool with that."

Suddenly, Bithell wasn't alone any more. Like Thomas, he had built a team of friends around him. "I put out a friend request and the Internet answered," he jokes. When *Thomas Was Alone* became available for download via a standalone website in late June 2012, and on Steam in November, it quickly found an audience. But there was one more friend left to emerge from the wings: Sony's PlayStation division.

Shahid Ahmad loves games. He especially loves indie games. He's a senior business development manager for Sony UK, and has been responsible for signing everything from *Hotline Miami* to *Luftrausers* to the company's platforms. His team of consultants spend "their entire working life – as well as, it seems, their waking and sleeping lives – playing and analysing games".

Back in 2012, his group was looking for content that would suit PlayStation Vita. When Ahmad saw the April Fools' Day video for *Thomas Was Alone*, which jokily pretended that the blocks were motion captured, he was "absolutely bewitched". Impressed to find a solo developer using non-traditional marketing techniques, he reached out to Bithell on Twitter. "At first, he must have thought I was a stalker," says Ahmad with a laugh, "because I didn't tell him I was from PlayStation. He thought I was just a fan." They exchanged a few messages.

When *Thomas Was Alone* came out, the game charmed Ahmad all over again. "I thought it was inspired. I thought it was taking independent games in a new direction. I loved the use of narrative and that it was totally, unapologetically about squares, although that wasn't the point of the game," he explains. "I thought all of these unusual messages very much suited PlayStation and one of the directions in which we were taking Vita." A deal was hatched. With the help of Bossa and Curve Studios, *Thomas Was Alone* was ported across to PS3 and Sony's handheld.

The current narrative of the next-gen console war is that Sony is positioning itself as the go-to place for indies. Is that true? "This is happening," says Bithell. "I come from a console background. I've developed games for consoles. Obviously, I was in junior positions in those conversations, but you could tell the kinds of relationships that took place between console developers and publishers. Sony are trying to tear down every limitation. They're making a smart call. It's that old war analogy: every army learns to fight the last war just in time for the next one. That's what's happening with console generations."

For Bithell, *Thomas Was Alone* arrived on the PlayStation platform in the midst of "a period of transition, I think, from the old-school way of working with developers to something new". He's convinced the new Sony is a more open place. One look at the Twitter feeds of Bithell and Ahmad suggests things really are different than they were a few years ago. Ahmad isn't just a suit. He's accessible, interested – the human face of a monolithic corporation, much like his colleague Shuhei Yoshida, president of Worldwide Studios.

It's a view echoed by Bithell himself. "Shahid is my man," he says warmly. "Sony are moving with the way things are now." He mentions a meeting he's having with the company about his next project. "I have no compunction telling you that [meeting is happening] because [Ahmad and I] had a chat on Twitter about it. That's a big shift. It changes a lot. It's a different way of doing business. It suggests Sony is becoming a very different company. Maybe they have learned that focus is a good thing for them. It's something they maybe didn't get right in the last generation – they may have spread themselves too thin and not had quite the focus they should have had. I think they've learned a lot. The fact that I'm happy telling you that opinion and am happy for that opinion to show up in this article kind of demonstrates how they've made me feel. There's no way you're going to hear anyone talking about Microsoft in that way, at least not publicly. There's a very different relationship forming."

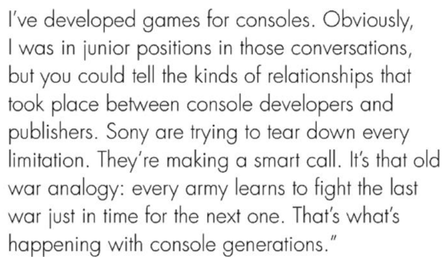
Bithell is currently preparing 'Project 2', which he hopes to announce in August. It's in 3D and is "a big step up technically". He's continuing his fascination with storytelling, and says he's interested in user-generated content, too. "There are a lot of map editors in the world, but there aren't a lot of story-creation tools," he teases.

Although he won't confirm *Thomas Was Alone*'s sales figures, he says he has enough capital to work on his own games for three to four years. "In indie terms, that's kind of the only important thing," he suggests. It's clear that his world has changed. Mike Bithell was alone, but he isn't any more. ■



Q&A

David Housden
Composer, *Thomas Was Alone*

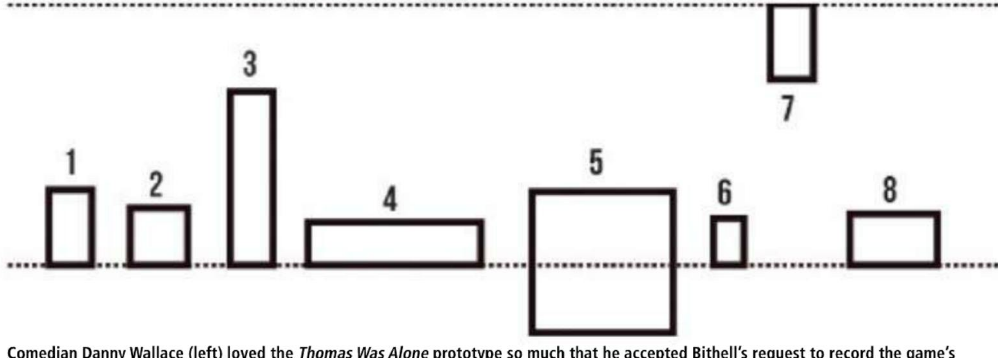


How did the procedural soundtrack come about?
Mike was really keen on having a procedural soundtrack to keep the experience fresh and away from the unimaginative, monotonous audio a lot of games are cursed with these days. The initial suggestion was that I write a track and then retrospectively cut it into three blocks – intro, middle and outro. Each of these sections had to be able to integrate seamlessly with all of the others, and then they'd be randomly generated, so you wouldn't hear the same arrangement each time.

Did it work?
No. It required abrupt stops at the end of every section, and in real life notes don't magically finish their decay at the end of a bar. There was no room for the notes to resonate naturally.

How did you fix it?
Mike came back to me with a wickedly complex suggestion, in that instead of breaking the whole track up, I break each instrument up. So I'd write a base track of one to two minutes in length, and chop the rest of the instruments up into four-, eight-, 16-, 24-, and 32-bar loops, then these would be randomly generated over the base track. So every single loop had to be able to coexist with any other loop at any given time. Pretty much like a construction kit… It was an absolute labour of love, but I'm really glad to have done it, because people can replay the game 100 times over and they'll never hear the same piece of music twice.

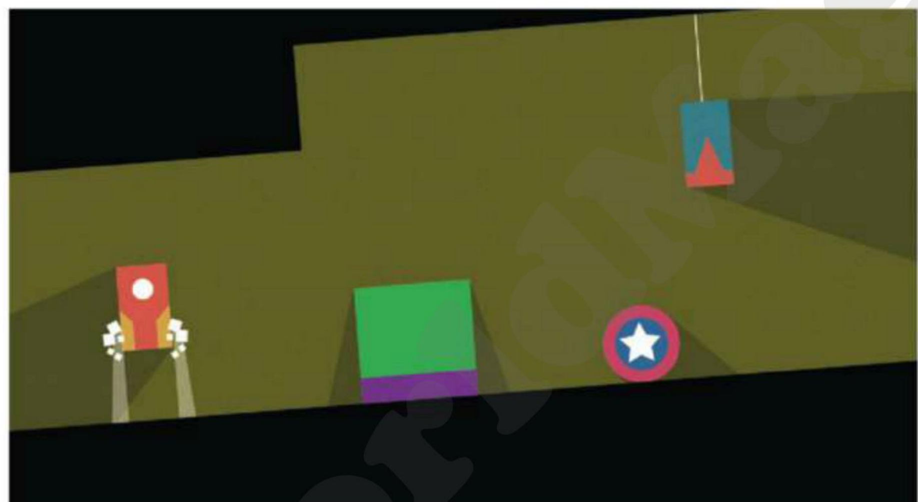




Comedian Danny Wallace (left) loved the *Thomas Was Alone* prototype so much that he accepted Bithell's request to record the game's narration. He ended up winning a BAFTA for his trouble. An early character page (above) listed each quadrilateral's traits and abilities. Number eight is Sam, a deadweight who Bithell says was later cut "for being crap". He couldn't jump and had to rely on everyone else

Marvel avenges

Not everyone has extended their friendship to Bithell and *Thomas Was Alone*. When a fan made an off-hand joke about the game's cast being the quadrilateral equivalent of The Avengers, Bithell playfully made a mock-up screenshot of angular versions of the Hulk, Captain America, Iron Man and Spider-Man and put it online saying, "Hey Marvel, let's do an Avengers game." Intellectual property lawyers aren't renowned for their sense of humour, though. "I got quite a snide little response saying 'Absolutely, if you pay us for our characters…'" Bithell, who'd spent a chunk of his career working on IPs like SpongeBob SquarePants at Blitz Games, found the cease-and-desist threats rather surreal. "It was never something I was actually going to make. It was just a very odd conversation." Still, some good came of it: his Iron Man block – fitted with jetpack-style repulsors – inspired Benjamin in his game's first DLC expansion, *Benjamin's Flight*.



Bithell, a huge Marvel fan, mocked up this Avengers pastiche as a gag after a fan comment. Marvel's lawyers missed the joke

What Games Are



TADHG KELLY

Let games be games

We often hear that games need to get past their juvenile mechanical phase. We see projects like zines (self-authored interactive artworks, some of them games) gain attention on this basis, and sometimes wrapped up in the question 'When will games move beyond fun?' We hear that maybe if games try hard enough to not be game-like, they will overcome their inadequacy.

Many game makers, academics and journalists are sick of seeing the same teenage-level product of the industry year in, year out. They note the absence of deep intellectual debate, and of an audience to have that conversation with. They conclude it has something to do with a lack of seriousness, of meaning and emotion in our storytelling. And they feel ashamed of gamers' obsession with killing, explosions and whatnot.

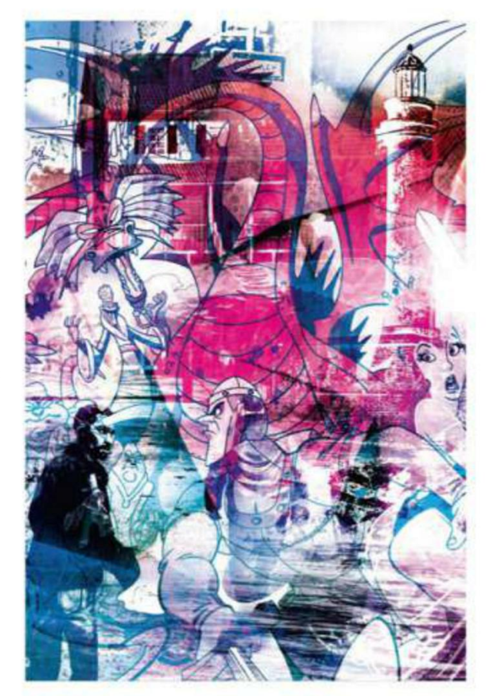
They believe that games not only need to change, but that they are about to. In their future, the next generation of game design will be deeper. It will not involve all that depressing killing and stuff, but discovery, emotion and meaning. It will step away from the old ways of solving mechanical problems – such as scoring and winning – and become about experience.

However, when you really look at some of the examples of games that show this future, something's amiss. Many consist of little more than walking around, looking at stuff and making authored choices. A cross between *Dear Esther* and *Dragon's Lair* perhaps, with a touch of text adventure thrown in. That's the next generation of games? It seems a lot like the past.

Shame-based thinking basically advocates for a return to adventure-game-like interaction. It proposes that exploration, conversation and artistry are the real substance that games often lack, and that if only we could get back to those roots then the shame problem would be solved.

It's a common notion that something powerful was lost when adventure games lost prominence. It holds that the industry deliberately moved away from them at a time when 3D rose to power in order to focus on trying to please teenage males almost exclusively, resulting in a loss of diversity.

That's one view. Another is that adventure games receded from view for one simple reason: they weren't that much fun. While they sold for a time, and were often the most graphically beautiful games of their day, they were frustrating. Players who didn't appreciate laborious cutscenes, fetch quests or interminable riddles didn't love them. And when other kinds of game graphics caught on and surpassed adventure games, the market simply chose to have more fun elsewhere.



A cross between Dear Esther and Dragon's Lair is the next generation of games? It seems a lot like the past

Adventures may have brought great writing and story to games, but did so at the expense of the player. Even modern examples, such as *Heavy Rain* or *The Walking Dead*, show exactly this trait. So too the more exotic walking simulators like *Proteus*. They may be avant-garde among gaming journalists, perhaps the gaming equivalent of John Cage's 4'33", but nobody in the music industry thinks that a conceptual silence piece indicates there's a mass-market demand for silent records.

Outside the realm of the true believers and shame-feelers, this adventure game-y future doesn't really mean a whole lot. It's a return to the past, saying games can only be an art if they go backwards. It denies the present – that games are an art form as they are, not as they might be. And that art form is inherently mechanical.

Games need doing and winning for a reason. They need to be abstract for a reason: to systematise and reduce complexity to elegance, and yes that means that they become mechanical. Those pesky mechanics drive the whole form. The need to achieve and learn is paramount, just as much as the need for patterns, notes and rhythm is essential to music.

Mechanics aren't juvenile any more than rhythm is juvenile or camera techniques are juvenile. There's no burgeoning market for a genre of game in which you essentially walk around and do nothing any more than there is for free jazz. Without mechanics, a game is just an art gallery or a dressed-up movie. And while that can be a novel experience, it also plays itself out pretty quickly. I loved walking around *Proteus*'s island, but do I want to do that in ten other experiences?

I suspect that shame thinking is really about frustrated creativity. Many of us wish that we could be the one making the meaningful game, to solve the problem of why game stories aren't any good. Many of us struggle with the fact that we can't program so well, and project our inadequacy outward. It seems unfair that only the few who are suitably skilled get to make certain games, and the audience tends to respond to them over us. So, you know, games must change or something.

It's hard to accept that the unique traits of games empower them, but maybe not in the way that you'd hoped. But personally, I am sick of hearing about how ashamed that's supposed to make us feel. I don't see how that stance is supposed to somehow move the medium forwards, and would prefer to see a little more acceptance and a little less neurosis over what this art form we've created actually does well.

Tadhg Kelly has worked in games, from tabletop to consoles, for nearly 20 years. Visit him at www.whatgamesare.com



In The Click Of It



CLINT HOCKING

Beyond the grave

Last month, I wrote about our collective overreliance on death and killing as themes in our medium, and about how games that rely on these to drive their core experiences tend to lack nuance. This month, I would like to discuss those ideas a little further, but by looking at the problem from a different angle. I'd like to try – just for the next thousand words or so – to imagine what a game without killing and death might look and feel like.

Of course, this raises the question 'What is there to imagine?' There are literally hundreds of such games. Take *Pole Position*, *Tetris*, *Katamari Damacy* or *Proteus* – we've seen countless games over the course of decades that contain no killing and no death whatsoever. A game such as *Drop7*, for example, is entirely abstract, and while I would be among the very first to argue that *Drop7* is more about life and death than *Dead Island*, that's not really what I'm talking about. We also have games that simulate some other specific human activity that itself does not (typically) include death. Games such as *Tony Hawk*, *Forza* or *Guitar Hero* simulate activities where neither death nor killing are key components, nor are they interesting boundary conditions for the simulation. Then we have the indie darlings – games like *Gravitation*, *Flower* or *The Graveyard*, which in some cases may well be more about death than the typical triple-A action game, but do not feature interactive killing in any way. Beyond those, I will not even attempt to name the casual games, word games, children's games, social games, mobile games, and apps where we tend gardens, draw pictures, feed fish, count shapes, breed dragons, or match pairs, all without firing a single bullet or decapitating even one deserving orc.

I think it is a wonderful and amazing thing that we have such an incredible diversity of games and such a rich set of themes to explore. I would hazard to suggest that today – possibly for the first time in the history of our medium – games that are (on the surface at least) about killing and death are probably now in the minority. So why in Hell would I want to devote an entire column to imagining some other hypothetical game that does not include killing or death?



I would hazard to suggest that today games that are about killing and death are probably now in the minority

I don't want to talk about what just any old game without killing might look like – we have thousands of living examples that we can go and play whenever we want. What I want to talk about is specifically the idea of a modern 3D game in the triple-A story-driven adventure game genre that does not include killing. I don't want to talk about that idea because I think this sort of game is somehow better than all the other sorts of games we already make to explore themes other than killing and death – I simply don't think that's the case. I want to talk about the idea of this game because I feel that such a game is colossally difficult to make, and the fact that it is so difficult makes it interesting to think about. Imagine a game in the mould of *Dishonored*, or *BioShock*, or *Thief* where killing and the various weapons and abilities that enable it throughout the game aren't available to the player at all. What would such a game be like? What would the verbs be? What would be the low-level toy?

Immediately, the mind reaches for two answers. *Thief*, for example, becomes more about elaborate environmental puzzles, with huge stone slabs and levers that need to be pulled in the correct sequence in order to loot an estate of its treasures. *Mass Effect*, on the other hand, loses its combat and becomes a narrative adventure game that leads you from scene to scene. In it, you talk through decisions until you reach one of a few hundred possible endings. Both of these answers are certainly valid – we know that because games like these already exist. But I feel both of them are also kind of missing the point, and are dodging the thing that makes the design of such a game so seductively difficult.

When I think about making a game without killing, what I imagine is a game full of rich low-level interactions with the world and with other characters that are not principally about dialogue and conversation. I imagine trying to figure out which is the real Lady Boyle in a mansion with hundreds of guests. I imagine needing to move from room to room, shuffling from one cluster of partygoers to another, à la *Spy Party*, without being detected as the unwanted guest. I imagine myself having to tango metaphorically – or perhaps even literally – with another player who, as in *Journey*, happens to be playing the same game at the same time. Recognising one another as players, we find ourselves in a prisoner's dilemma. Do I keep quiet about her? Will she keep quiet about me?

I think that while many people are working in parallel on different pieces of this puzzle, one of the (few remaining) great things that triple-A games can do that other games cannot is synthesise large feature sets into complex, compound experiences. I hope that the coming generation of hardware will finally allow us to see a character- and story-driven triple-A game that is not about killing.

Clint Hocking lives in Seattle and works at Valve Software. He blogs at www.clicknothing.com



The Possibility Space



RANDY SMITH

The three levels of game creation

When I joined the industry in 1997, a junior designer might plan and build an entire mission, tune enemy behaviours, and script and adjust encounters. Such work requires obscure knowledge of procedures, simulations and player psychology. In the creative endeavour of making games, game design is a close-to-the-ground, low-level perspective. I started to see games in terms of 'correct' and 'incorrect' design. If a guard patrolled at random down a bright hallway, that was incorrect. To correct it, perhaps make the patrol predictable and change the light to a torch to afford the player possibilities. Design was a calculator and improving games was only slightly more ambiguous than solving trigonometry sums.

My 'correct design' mentality hit its breaking point during *Thief II*. Adopting a 'gameplay is king' mindset, I pushed for more core stealth, less fantasy and fewer zombies, and level design trumping the crap out of story. We brainstormed missions first, then attempted to figure out how the ending threads of one might plug into the start of another. The resulting fiction performed Olympic-quality contortions, becoming diluted and fussy in the process, lacking the graceful simplicity and thematic muscle of *Thief*. What's more, being trapped in stealth gameplay 24/7 was stressful and wearisome. How could this be when the design trigonometry clearly concluded that *Thief*'s zombie blasting and swordplay in the city streets were incorrect? Why does it matter if themes are incoherent when gameplay matters most?

As a working designer, my entry point was that low level of design. Ironically, the entry point for informed consumers is probably the higher perspective of direction. Players might not know how games are created, but they know what they like and have ideas about how games should feel. That's similar to the job of director, who decides what experiences the overall work should provide and hands those down as goals. A good director knows the incorrect design of a dungeon crawl can have a supporting role in an urban stealth game. Without realising it, I was clinging tightly to assumptions that prevented improvement. I was good at solving problems, but not good at thinking about what should be solved in the first place. Every problem contains an assumed value. When you balance the mechanics to be more fair, you've already assumed fairness is the right goal.



Each time a designer realises game design is the start, not the end, they become a potential force for evolution

When *Modern Warfare* opens with the disempowering experience of being executed, it's demonstrating a boldness of direction not as evident in yesteryear's one-note *Quake*. Effective broad direction is a modern standard in gaming. But even with this flexibility, directors are often lodged deeply in assumptions about what games are supposed to be. Graphics aside, the average mainstream game today doesn't seem so different from the equivalent ten years ago, at least not to non-gamers. *Assassin's Creed III* incorporates deer hunting, but that's no huge jump – it's still about killing things, which is one topic non-gamers perceive games to be about. Directors get mired in dogma as easily as designers. There are ready-made templates to dictate frequency of rewards, rhythm of empowerment, when to be deliberately confusing, and so on. What values are assumed? Perhaps successful product, maximum fun factor and enjoyable power fantasies?

The highest-level perspective on creating games is art. When I say 'art' in this context, I don't mean visual arts, but the more general sense of employing the interactive medium itself with artistic intention. The time has come for us to create the distinction between 'game artists' and 'game-visual artists'. Art in this sense is the entry point for non-gamers, people displaced from the medium, people like our parents, and filmmakers interested in making games. Some consider run-ins with them frustrating, because they say things like, "Why isn't there a diplomatic resolution with the Zerg?" and "Let's make a game where you never have any idea what to do." You could argue they miss the point or are ignorant of what games must be. But they're often refreshingly observant, and I find it inspiring to think about what the medium hasn't done, what its capabilities really are from first principles, and why I'm spending my time this way. Good design makes existing games better. Good direction evolves existing paradigms. To create new paradigms, you need game artists.

My story is about moving up through these levels of perspective, questioning assumptions and rethinking where creative energy should be applied, and this is one important path. Each time a designer trapped in the vortex of gaming culture realises game design is the start, not the end, they become a potential force for gaming's evolution. Another path is downward, of empowering those non-gamer artists to express their crazy ideas. For the sufficiently technical ones, modern tools are a damn sight easier and more powerful than the antique systems of 1997, and I suspect this is one reason we're seeing a sharp increase in unconventional offerings. Most non-gamers require more support, however, and hopefully we're also seeing a shift in assumptions that will make our culture more welcoming of their involvement.

Randy Smith is the co-owner of Tiger Style. He has also compiled his favourite songs into a mix: www.bit.ly/VgA56n



Word Play



JAMES LEACH

Who needs love like that?

Tina Turner once sang What's Love Got To Do With It. And despite not having a question mark, I am treating it like a question and asking it in the context of videogames. We all know it's possible to love games, or elements of them, and even to love the characters in them. Love is the only word that accurately describes the reason I devote dozens, even hundreds, of hours to playing my favourite games, and thousands more to making them. Money is another word.

But I was watching someone replay *Final Fantasy Umpteen* this week. I'd forgotten how long it took, how much text there was to ignore, and that *Final Fantasy* was ever an anticipated thing that people bought. I'd also forgotten there was a love story in there, one you were supposed to care about. The only love story in the world I care about is that of Charlie Brooker and Konnie Huq, so it's forgivable that I forgot. But love? Game? Love in a game?

Why, though? I've watched at least one film with a love story in it to the end. I know that love sells. I live near enough to Bristol to even know where I can buy it. So why do I hate it in games? The reasons are many. Well, three. Firstly, it has to be done slowly. I learned this 20 years ago. But telling a love story requires a dramatic change of pace, which, frankly, doesn't suit games. You can pause games to drink Orangina (or whatever it is the gaming youth imbibe), but you want them to be manic and mental, and you don't want any interruptions. We'll hammer buttons to get through the cutscenes, let alone a tender moment.

Secondly, love scenes require us to care about the characters. Not just get their story, but care about them. If I am to get it on romantically with *Final Fantasy IX*'s Dagger, for example, I need to want to, not simply get to the stage where it happens. I resent being a character and fighting and puzzling and struggling as that character without having the ability to control who that character loves. Plus Dagger's eyes are too big and she squeaks like she's in pain a lot.

Thirdly – and this is a vast thirdly – this is a game. I only want to know what I need to know to progress. Funnily enough, that's all I'm keen to do. That I care is a byproduct of my success. The better I do, the more I invest in the game. And the more I invest in the game, the more I want the character to be me. And I want my character to be single-minded, and not stupid, and not fall in love, or indeed have sex, or do anything I don't want them to do. I'm not doing all that, so why should they be?



If I am to get it on romantically with FFIX's Dagger, I need to want to, not simply get to the stage where it happens

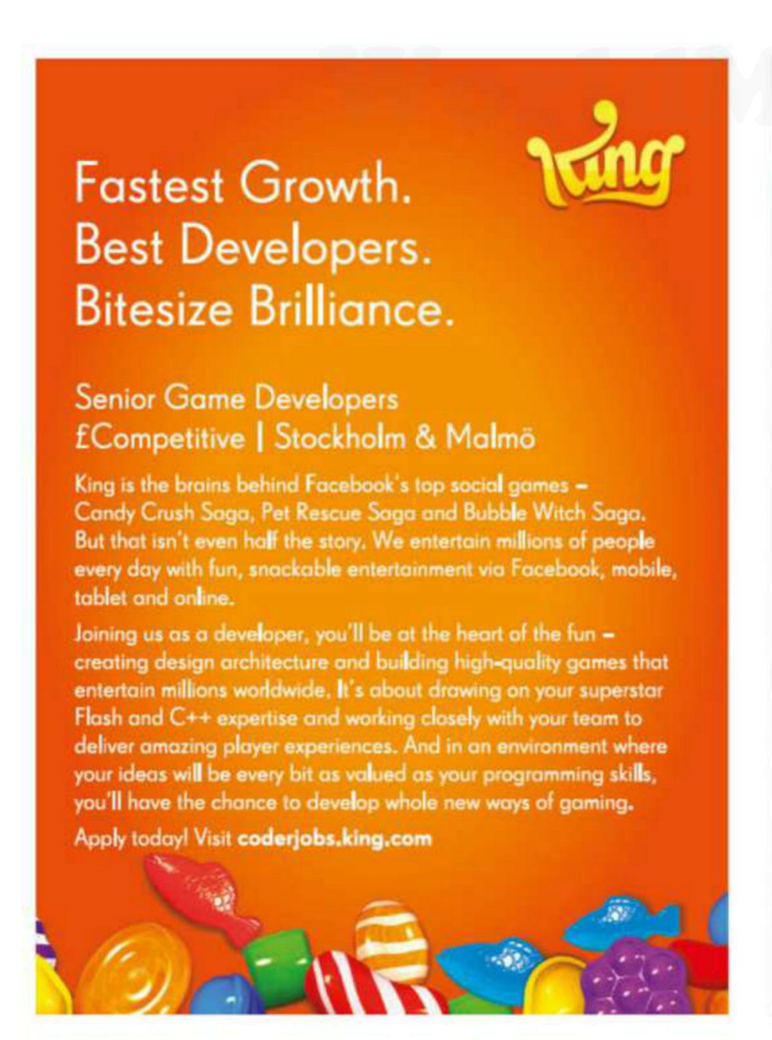
Back in the Edwardian era, there was a Microprose game called *M1 Tank Platoon*. I played it muchly, and each tank in your platoon (you had four) contained four geezers whose skill percentages rose the longer they survived. They had names, which upon reflection were either computer-generated or reflected a diverse ethnicity that might have caused problems if the game was released at another time. If you were skilful enough, you could flit between each tank and be the command and the gunner and wipe out the Warsaw Pact that was obligingly driving towards you in inferior vehicles. After an afternoon of hammering the red foe, you'd end up with a few crewmen at 100 per cent skill. You could put these hardy chaps in one tank and it would be as good as you, the human with human feelings. The other three tanks got your attention and you could let your aces thrive.

I remember those guys, though. Hartz, Goldstein, Washington, the Mexican-sounding one. They were the best of the best of the best. And I imagined them knowing it. Sure, if they died I lost a useful armoured unit, but I also lost an elite team, which had bonded like in Band Of Brothers. And it wasn't just the hours of effort getting them there. It was luck. Sometimes the enemy would pop up so close to my fantastic 'Murican tanks that there was genuinely a danger I could lose one. The greater the peril, the more I loved the guys for surviving, even if I had to help them out like the godly gunner I was.

I loved them. After dozens of missions, I loved, er, Gump, Klinger, Major Major and Private Ryan for what they'd been through. But if there had been a story and one of them had fallen in love (with a girl), I would have drummed them out of my Tank Command Afrika Korps unit in a moment. They would be doing something I didn't want. And that is not allowed. Two's company, but three's a crowd. If a character in a game gets lovey, even if it's supposed to be me, I'm the one on the outside, as it were. I'm the gooseberry, and I don't want that.

Oh, and for what it's worth, my tank of heroes eventually threw a track on a hillside as the Commie scum swarmed. All the other tanks exploded. We fired and reloaded and fired and reloaded, and with my divine help the kills racked up. Not a single word of dissent was uttered (this was an Atari ST game, and they could have used the great sound chip in that bad boy). And then boom. We died together. I don't think I played it ever again. If you want love in a game, that's one way of doing it.

James Leach is a BAFTA Award-winning freelance writer who works on games and for ad agencies, TV, radio and online


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Region Specific: Switzerland

The Swiss game industry may be small today, but it has some grand ambitions

Like its music and movie equivalents, Switzerland's game industry has few internationally recognised homegrown developers. But people on the development scene here have no intention of letting that remain the case for long. One name that you may already have heard of, though, is Giants Software (1), the studio behind the extremely popular *Farming Simulator* series. On p160 we find out how *Gran Turismo* has influenced this more sedate sim. If you're a dedicated PC player, you will also remember Ageia, the company Nvidia (2) bought for its PhysX technology. We learn more about the future of game physics on p162. Gbanga (3) wants people to play games with more than just their phones, and on p164 we discover how its players are taking to the streets of Zurich. But if all that running around doesn't appeal, EverdreamSoft (4), which we profile on p166, might just have the answer with its mobile card game *Moonga*. Bitforge (5), meanwhile, blends humanitarian ambitions with more profitable corporate services – and even found time to create the critically acclaimed smartphone game *Orbital*. We talk to one of the studio's founders on p168. And finally, on the same page, we spend some time at Zurich University Of The Arts (6) to discover how its broad approach to game design education is producing some very exciting work indeed.


3
6
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150
150



SWISS TIME

One of Europe's youngest development scenes is ready to show the world its wares

LANDMARKS

1 Located in the western half of Switzerland, Bern is the country's capital.
2 Cable cars are an efficient way of climbing the Alps, but obviously aren't for the weak of stomach.
3 The Alps cover over 60 per cent of Switzerland.
4 Lausanne is situated on the northern shore of Lake Geneva, and offers views of France on the south side.
5 Zurich is home to most of Switzerland's development community, and is bisected by the river Limmat

Multi-tools, timepieces, triangular chocolate: Switzerland is famous for many things, but its game industry certainly isn't among them. Not yet, anyway. In fact, the development scene we find in Zurich is one of the youngest we've visited during any of our Region Specific excursions. But despite its youth, it's also one of the most diverse.

It's very much a product of its multicultural surroundings, calling a country that speaks French, German, Italian and Romansh home. But if there's anything that glues its disparate developers together, it's a common willingness to reject the path of least resistance in favour of more risky byways. The broader strokes are here, certainly, in mobile games, middleware and free-to-play, but within those channels the Swiss have an inherent desire to innovate.

It starts at an educational level. Our appointment at Zurich's University Of The Arts was significantly extended after we were shown examples of the students' work. *Daina And The Herbarium*, an adventure game centred on maintaining gardens in a fantasy world; *Krautscape*, a racing game that flips the front-runner's advantage by gifting players the ability to fly and making the leading car 'draw' the track; and *Hollow Grounds*, which requires you to spin your phone around as your wingsuited character descends through cave networks. None would look out of place among today's glut of Kickstarter appeals – indeed, *Hollow Grounds* is already available through iTunes.

Gbanga, Bitforge and the Geneva-based EverdreamSoft are finding interesting ways to use smartphones, too. Though their approaches are different, all are making games that spill out of the device into the real world. The former's mixed-reality projects include *Gbanga Zooh* and *Mr X*, which turn Zurich's zoo and transportation system respectively into the playgrounds for geo-location-based games. EverdreamSoft, meanwhile, has built up a successful mobile trading card game, but is now following Activision's *Skylanders* model by creating real cards to match their digital counterparts. And Bitforge has created ostensibly simple games such as *ByeBye Mosquito* and *Amanzivision*, which raised money for mosquito nets and fresh-water wells for real-world communities who most need them.

Staying on the subject of irrigation, Giants Software has found incredible success on almost every major format with its *Farming Simulator* series. That's not to downplay the worth of *Demolition Company* and *Ski Region Simulator*, its other virtual second jobs, but agriculture has a habit of appealing to the masses. With a PS3 and Xbox version currently in the works, as well as already-released DS and mobile versions to complement the PC original, Giants is continuing to prove that fact, while the modding community that has sprung up around its game is fervent, to say the least.



Zurich's streets are an intriguing mix of traditional Swiss architecture and pop-up buildings made of recycled materials

A number of large, international publishing and tech companies are finding their way to the landlocked country now (the country's low tax rates have long attracted business from other sectors), including Disney, Google, Deep Silver parent company Koch Media, and Nvidia. The latter established roots when it purchased Ageia, the Swiss company behind the PhysX SDK (formerly NovodeX SDK) and acceleration card. The office is now dedicated to improving its powerful physics engine.

Like its videogame industry, the city of Zurich is in a state of rapid growth and development. Cranes loom in the sky in any direction you look – though in the distance behind those cranes you'll also have a spectacular view of the Alps – as new buildings and flyovers are created, and the public transport system extends its reach. Despite all this expansion, however, the city still feels surprisingly intimate for such an international hub. There's a thriving arts and bar culture, with every disused space seemingly filled with a gallery, counter-culture shop or watering hole. This pop-up nature gives the city a distinctive character as concrete-and-glass skyscrapers rub shoulders with stores and bars built from stacked shipping containers or sheets of corrugated metal. Head farther into the centre, though, and you'll find more traditional architecture following the path of the river Limmat, a 500-metre stretch of which has been turned into an open swimming pool. We spent some time going over notes in a bar next to it, but couldn't quite work up the courage to jump in.

It's easy to get around, too – as in Dublin last year, we were able to walk between almost all of our appointments during the trip, only needing to take the train once. But if you do decide to hop on a tram, train or bus, a single ticket will allow you to use any of them within a zone system that's easy to understand. While our roundtable discussion on p156 draws attention to the serious nature of Swiss natives in general, there's a dry, self-deprecating sense of humour to be found here too. As we're ferried from the airport terminal on a gleaming white automated train, the ultramodern atmosphere is interrupted by the sound of yodelling and mountain goats bleating as a video of a man waving a Swiss flag plays out on the walls outside. It's a distinctive welcome to a country that's as proud of its rural heritage as it is of its technological advancements.

In its current state, Switzerland's game industry is roughly analogous to the burgeoning scene in Finland three or so years ago – indeed, it's a comparison made by many of the people we meet during our week here. Though it can't boast of a similarly long heritage, it has an undeniably disparate scattering of ambitious and idiosyncratic companies who've cohered into a development community almost by accident. (Not completely by chance, of course – the Arts Council has nudged things in the right direction by promoting and supporting its members.) Through their ambition and seemingly effortless international appeal, though, there's a sense that the years of quiet development are finally about to earn Switzerland's technology and game makers the recognition they deserve. ■

Zurich is in a state of rapid development and growth. Cranes loom in the sky – though in the distance behind them you'll have a spectacular view of the Alps







ROUND THE TABLE



The founders of Switzerland's game industry on river swimming, privacy and what really defines the region







Thomas Frey
Art director, Giants Software



Adam Moravanszky
Senior software manager, Nvidia



Reto Senn
Co-founder and CEO, Bitforge



Shaban Shaame
Founder and CEO, EverdreamSoft



Beat Suter
Game design lecturer, Zurich Uni Of The Arts



Matthias Sala
Co-founder and CEO, Gbanga

This is one of the smaller groups we've assembled for a Region Specific discussion, but that doesn't mean there's any less energy in the room. Nor is there a lack of food, with a temptingly laid-out buffet large enough to cater for representatives from a dev scene twice the size. Perhaps it's wishful thinking, but given the industry's gathering momentum here we suspect there'll be many more mouths to feed this time next year. For now, though, we'll have to rely on the appetities of Nvidia senior software manager **Adam Moravanszky**, Giants Software art director **Thomas Frey**, Bitforge CEO **Reto Senn**, EverdreamSoft CEO **Shaban Shaame**, Gbanga CEO **Matthias Sala** and **Beat Suter**, game design lecturer at Zurich University Of The Arts.

What do you think defines the videogame industry in Switzerland?

Shaban Shaame In Switzerland it's a little bit fragmented – there are Italian-, German- and French-speaking areas. I'm from the latter, and in our part there's not a lot of stuff happening. There's more in Zurich, the German part. So we're a little bit isolated from other developers.

Adam Moravanszky Actually, isolation is also the word I was thinking of. It's definitely what we were feeling when we started with [physics middleware company] NovodeX here. And we certainly had a difficult time to start with because all of the big game industry conferences you should go to to network and find customers were taking place abroad. There wasn't really anything here… or even in the surrounding countries. Of course, now there are consumer-orientated events like Gamescom in Germany, which is great. Having to go a bit farther to find customers made it more difficult to start back in 2001, but now, as you can see, there's a number of game studios here at the table, so things are starting to happen.

I'm actually very optimistic with regard to the future of the Swiss gaming industry because I think it's a very attractive location. We've had some top talent from internationally renowned triple-A game studios relocate to Switzerland to work with us because the quality of life is so nice here! Zurich is kind of a 'little-big' city in the sense that it has all of the conveniences, but you don't have to drive half an hour to get to the next McDonald's – everything's in walking distance. You can even walk across the entire inner city in reasonable time if you're so inclined. It's almost rural if you're coming from a place like Boston, which is where I moved from.

Beat Suter I would say it's actually a very dynamic scene. Within the past five years or so there has been tremendous development within Switzerland and we have a lot of young people who are now working in game design. And we started the game culture initiative in 2009 and it brought all the players together in Switzerland – Geneva, Zurich, everyone. And now we're really connected well – we talk to each other and it's a good base for new projects, which are always evolving now. So I do think it's a very dynamic scene, but of course we don't have any big players here.

AM The game curriculum at Zurich School Of The Arts contributed a lot. I was actually involved in the starting of that in the beginning. They were a customer of ours when they needed a launch game as an advertisement platform. I was very excited about that and some of our employees were interested in getting involved and helping out with lectures and the teaching because it's an awesome vehicle to find new talent.

BS We were part of it, of course, but it was more than that – there were actually other players around but you just didn't know them before. And through networking with each other we grew as a scene, a community.

AM It's true that there were some very early players, even before us, like [PhysX research lead] Matthias Müller-Fischer, for example. When he was a student he and some colleagues wrote a videogame version of [Swiss card game] Jass. It's something that only Swiss people would want to play but it's also something that will never have any kind of international competition because no big videogame studio would ever make a Jass game, so they were able to sell 100,000 copies back in the late '90s, which was completely unprecedented in Switzerland. And ever since then they keep putting out more up-to-date versions on iPad and iPhone. It's still a very lucrative side business for them.

Has the government noticed all this growth? Has it made any funding or aid available to help develop things further?

Reto Senn The Arts Council has really invested in it and they see that there's a lot of potential. They were also the first to recognise how many players didn't know each other who needed to be brought together and so they simply created a LinkedIn group and invited everybody. Suddenly you saw all the companies around, all the people involved in games, which you didn't see before. And even if you knew that there was another company, you wouldn't talk to each other because the Swiss are naturally shy! The group grew to, like, 400 people in a short time. That really helped to motivate us, because we were really isolated. We knew Giants and a few other people, but there was no sense of doing things together. Everyone was fighting for their own cause, doing things on their own. But after the group was set up we relaunched the IGDA chapter and 50 to 80 people came to the meetings – it was really surprising for such a small location.

Matthias Sala We have a lot of startup initiatives now, so young teams are starting companies and game studios. And I think what's special about Switzerland is that we try to innovate: we have exciting middleware, physics engines that are incredible, game concepts that are different… That's what you find in Switzerland. People here are really into creating something that is disruptive in some way.

AM That's actually a really good point. If you think about it, all of us here are doing something that's fundamentally different – nobody's trying to do another Xbox action game, right? I think a lot of studios say, "Look, this is successful so we're going to follow that". A lot of people here are trying to do something that isn't so obvious.

Thomas Frey *Farming Simulator* is a niche that never existed before! And we found the niche.

AM And I think that's true for a number of us.

SS It's part of our culture, I think. It's an expensive country and we need to do a lot of research, so in our culture we are taught to innovate, not copy. As a startup if you go to an investor group you cannot just say, "I'll do another game". They will ask what you are going to bring to this thing.

BS I also think mobile platforms could provide a big opportunity for Swiss game developers – you could take Finland as a role model for Switzerland. Like Rovio or Supercell.

AM The cost of labour is also very high here.

"We've had some top talent from internationally renowned triple-A studios relocate to Switzerland to work with us because the quality of life is so nice here"

We wouldn't be able to compete when it comes to creating assets.
TF Yeah. We're really small [at Giants Software] – just 15 people in Switzerland – and we can't produce assets here. So we need to work with outsourcing companies in China or Eastern Europe who can do it affordably.

You mention Finland's game industry, which is growing rapidly, as a model, but do you think high labour costs here could impose a natural limit on the potential expansion of companies in Switzerland?
TF I was thinking about it and it's more about the art of the game, the complexity of the game that you can do on mobile platforms. You can't recreate triple-A titles here. You would need a big company like Ubisoft to set up an office here.
BS But we do have companies very close to Switzerland, like Gameforge in Germany, that started with just a handful of people and grew rapidly. Gameforge is now in Rovio's league, around 600 or so employees. A lot of our students have been working there, and it's just two hours from Zurich.
RS Montreal invited the huge studios and then the rest happened. Here it's the opposite way round: grass-roots, organic growth or whatever you want to call it. But we also have bigger players starting to come in and that's good, right? So Disney and Google have set up research labs here, and they have huge numbers of people working on digital content. And I don't think it's *that* expensive here – I'd say it's comparable with London and San Francisco. But there's the added bonus that competition is lower here, with fewer game studios, so you're more likely to get the talent you need than elsewhere.
AM A former colleague left NovodeX and founded another startup that became quite financially successful relatively rapidly. He then opened a second office pretty quickly in Vietnam, and has most of his employees there. It's a form of outsourcing, effectively, and he still has his leadership team in Switzerland. So overall it's really a large company with multiple international offices. But yeah, he chose not to really grow the Swiss team.
BS The reason Google and Disney are here is quality of life; you can offer your employees a lot here. And they actually do that, especially Google: they attract everyone – some from outside, and some from inside Switzerland. The second big factor is education – we have a very high standard here. We have technical universities that are top-notch, which results in very well-educated people that you can then employ. They don't all have to go [and work for] the banks, you know…
AM Exactly, or leave for abroad, right? Of course, I was also one of these graduates and subsequently ended up hiring a lot of my friends and colleagues from school when we were starting this. If we don't provide employment opportunities for these kinds of people with these kinds of interests here then they just leave for Silicon Valley, right? And that, ultimately, is not a win for Switzerland.

What is it that makes Zurich's living standards so appealing?
RS People in London right now might be interested to know that over lunch you can actually go to the river [Limmat] and swim in it [laughs]. Or in 40 minutes, you can be up in the mountains for snowboarding in the winter.
AM During summer, a bunch of us from the office all take a bag with our swimming stuff and go down to the river – which is maybe a three-minute walk from the office. You can't swim very long because the current is very strong but you can drift down the river for like 20 minutes with all your stuff in a waterproof bag. The whole company does this. Then we get on a tram, ride back to the office and continue working!
AM It's rare to be able to do something like that in a city that has an international airport. In fact, I can't think of any other city where you have both. But it's a culture shock when you come here from the States. There, certainly on the west coast and maybe also to a lesser extent the east coast, you have this thing where people just make small talk with each other when you sit next to each other on the bus or whatever. It's almost automatic that the guy starts blabbering to you about something or other. And you know everybody's *superficially* very friendly and upbeat. But here you know you're considered a little bit weird when you just start talking to the guy next to you on the bus about the weather or how their flight was! I tend to forget how people are on the outside and then I go to GDC and as soon as I come off the plane all these people just start chatting with me. But I just want to sit there quietly, thinking [laughs]. Because Swiss people aren't so gregarious, you might assume that they're unfriendly, but you shouldn't. Swiss people can be really good friends, it's just that they don't share that friendship with absolute strangers all the time!
RS I think it's a sense of politeness. You don't want to disturb other people in the room. I think that's also very 'Swiss'. We are often compared with the Japanese, actually.
TF You often hear that celebrities like this about Switzerland because when they come here they won't be approached by strangers or people wanting autographs.

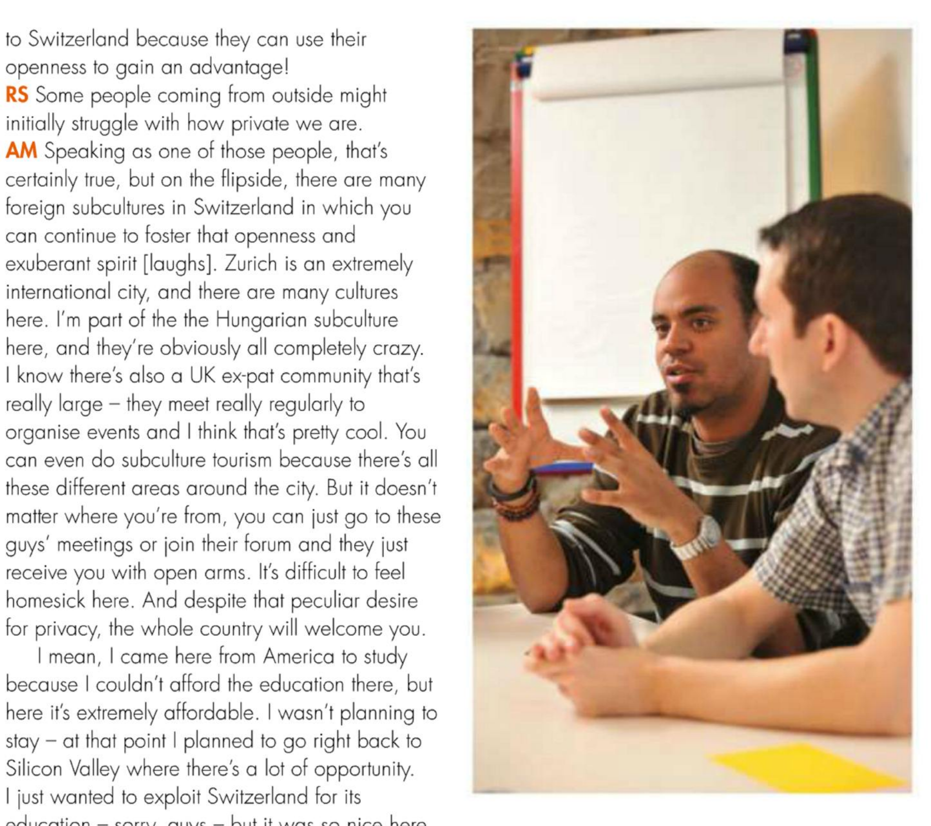
"I don't think it's *that* expensive here – I'd say it's comparable with London and San Francisco. But there's the added bonus that competition is lower here"



Or the tax man.
TF Yeah [laughs].
RS Someone as recognisable as Tina Turner can just walk around in a regular shop and nobody's talking to her or taking photos on their phone, because they'd feel like they were disturbing her.
SS That's not so great in an industry that requires so much networking, though!
TF But that's an opportunity for people that come

to Switzerland because they can use their openness to gain an advantage!
RS Some people coming from outside might initially struggle with how private we are.
AM Speaking as one of those people, that's certainly true, but on the flipside, there are many foreign subcultures in Switzerland in which you can continue to foster that openness and exuberant spirit [laughs]. Zurich is an extremely international city, and there are many cultures here. I'm part of the the Hungarian subculture here, and they're obviously all completely crazy. I know there's also a UK ex-pat community that's really large – they meet really regularly to organise events and I think that's pretty cool. You can even do subculture tourism because there's all these different areas around the city. But it doesn't matter where you're from, you can just go to these guys' meetings or join their forum and they just receive you with open arms. It's difficult to feel homesick here. And despite that peculiar desire for privacy, the whole country will welcome you.

I mean, I came here from America to study because I couldn't afford the education there, but here it's extremely affordable. I wasn't planning to stay – at that point I planned to go right back to Silicon Valley where there's a lot of opportunity. I just wanted to exploit Switzerland for its education – sorry, guys – but it was so nice here. And at the same time, President Bush was conducting his war on terror in America and it just seemed like such a hostile place that I changed my mind and decided not to go back. That turned out to be a fantastic decision, I think. I was still going to GDC at that time, and to visit companies for job interviews, and there were all these soldiers in the airports and every five minutes they'd be shouting, "Code orange! Code orange!" – it's so depressing, you know. I don't want that, and in Switzerland we don't have any of that.
SS Yes, Switzerland is very safe – you don't have that fear of being mugged or attacked.
RS The political environment here is very stable, so there's little civil unrest and few riots. Although you might run into some local 'friendliness' during the May Day holiday [laughs].
AM It was quite a shock for me coming here and knowing how American politics, and in particular Hungarian politics, work – which is similar to Italian politics, which you guys might be aware of. The different parties are really out to get each other and make life as difficult as possible for the opposition with smear campaigns and whatever. Here in Switzerland they like trying to collaborate and fix problems together. It still doesn't make sense to me, it's so weird, but at the same time it makes for a much more pleasant atmosphere.



How many parties are there?
BS Lots.
AM That's another thing – we don't have just two parties which are sort of strangling each other.

But how many have seats in government?
BS Four parties have seats right now.

Does that make it easier as a game industry to talk to the government about your needs?
MS I'm part of the Swiss Game Developers Association, and the interesting thing here is that because the economic environment is so good it's not really necessary to lobby parliament. All those tax cut discussions elsewhere? It's kind of not an issue here, so it's very entrepreneur-friendly.
RS Taxes are very good in Switzerland. We're very pleased with that.
SS When I meet other professionals or politicians and tell them I create videogames, their reaction is often, "Oh… OK, what's your real job?" So it's something that still isn't perceived as a serious career option. Swiss industry is very conservative, very serious, and in terms of politics, it's the same.
TF It's funny you say that because I was once in Basel, giving a speech to some art students, and they were surprised when I said to them that I actually earned money from this. They thought it was just a hobby.
AM While we decided not to go down the venture capital funding route, there's actually a lot of VC capital here. There are a lot of banks and investors looking for investments. And we've taken up loans and foundation grants, and there was a lot of help from [business incubator] Technopark and different venture park programs we have here. So, as you can see, Switzerland does invest quite heavily into getting startups, especially technical startups, off the ground.
MS Going back to the surprise that people have faced in relation to their career, it's perhaps a cultural thing. There's no entertainment industry in Switzerland, no tradition of having a TV station, or a movie or music industry. Well, not a big one, anyway – those industries are tiny here, and they struggle. But games seem to be one of the [country's] successful exports now.
RS The thing is that Swiss film and Swiss music is very… Swiss. It's not very often that you find a group from Switzerland getting radio play anywhere else. Maybe every five to ten years a famous group emerges. And it's the same for films. But with games, we can really reach an international audience.

Are you anticipating major growth here over the coming year?
SS I think the game industry here will grow, certainly. At the last GDC I saw a real evolution, with a presence from many more Swiss studios.
BS I think it's already happening in the mobile sector. We don't have an *Angry Birds* yet, but…
RS Swiss birds are friendly [laughter]. In terms of the quality of games, we're there, and who knows – maybe someone will have the same kind of fluke that *Angry Birds* enjoyed!
SS Yeah, I think mobile represents the most opportunities, too. A student with a big idea could start the next Rovio in Switzerland!
MS But it's not only mobile games. Look at the other platforms – Nintendo is opening up, PlayStation is opening up. It's really getting easier to bring your games to those [platforms]. And you don't have to make a big game with lots of assets, it just has to be a creative game with great ideas. The playing field is levelling out and I think it's really exciting. ■

Giants Software

This small studio with big ideas is carving a niche in simulation gaming



Founded 2004
Location Zurich
Employees 15
Key staff Christian Ammann (CEO), Stefan Geiger (CTO), Thomas Frey (art director)
URL www.giants-software.com
Selected softography *Demolition Company* (Mac/PC), *Ski Region Simulator 2012* (Mac/PC), *Farming Simulator 2013* (Mac/PC)
Current projects *Farming Simulator* (360/PS3/Wii U), *Farming Simulator 2014* (iOS, Android, Win 8 RT/Phone, Vita, 3DS, Kindle)





Giants Software is releasing new console-based versions of *Farming Simulator* in September which will include exclusive US-themed content

STUDIO INSIGHT
Christian Ammann
CEO
Thomas Frey
Art director





Despite its appearance, name and box art, *Farming Simulator 2013* isn't entirely what you'd expect. While it's no *FarmVille*, beneath that specialised livery is a simpler, far more approachable game than its simulator tag might suggest. We talk to founder **Christian Ammann** and co-owner **Thomas Frey**, respectively CEO and art director, about farming equipment and their biggest inspiration: *Gran Turismo*.

To be blunt, some people might be surprised at the popularity of your games. What do you think makes them appeal to so many people?
Thomas Frey [Laughs] When people see *Farming Simulator* they immediately think it's a hardcore simulation, like in the old days with *Flight Simulator*, but they don't realise that we have a different approach. It's more arcade, more casual and it's open world – a sandbox game you can walk around in. And because of this it's not just for hardcore simulation fans, but also for kids and parents playing with kids. That's something that we see a lot.
Christian Ammann At first we didn't expect that, but after a few years we realised the majority of our players are really young, and playing with their parents. And if we only had those hardcore fans [our games] wouldn't sell, or be successful.

What's your take on games like *FarmVille* and *Hay Day*?
CA I think the biggest difference in approach is that they're [set] in a fantasy world. They're very cute and very well made technically, but we work with all the major farming brands in the world and try to do something that feels more real.

You work on various platforms with a team of only 15 – how do you manage?
CA There's a lot of fancy stuff we *could* do, but you just have to say no – at first you have to do the basics and ship the game. That's a really important principle. We don't have the best engine in terms of graphics effects but that's not important – we have a very, very strong engine in terms of building content.

How close is your relationship with equipment manufacturers?
CA We have close and long-lasting relationships with these companies. We're invited to their manufacturing plants so we can test drive equipment or talk with them about the latest trends.
TF For this latest version, one manufacturer gave us a new tractor [to use] which you couldn't even buy [yet]. It's our goal to have the best quality and most accuracy in the world, and this is the way to approach this goal.

Do you see the audience split you mentioned across all of your games?
CA I think it's across all of our games, yes. There aren't enough simulation fans out there that we can make such high sales; it's impossible. Our games have very simple controls but a lot of depth.
TF You can also add complexity with mods. For some hardcore players it's not *real* enough – they create and download mods to make it more of a simulation. For us, it's a wish to be the *Gran Turismo* of farming. *Gran Turismo* is a role model – it's by far the best racing game, I think. It's a role model, a goal, a mission. ■



PhysX By Nvidia

Nvidia's Swiss studio aims to win the battle for game physics supremacy



Founded 2008
Location Zurich
Employees 13
Key staff Adam Moravanszky, Pierre Terdiman
URL www.geforce.com/hardware/technology/physx



Adhesive Games' FPS *Hawken* uses PhysX's Turbulence and Destruction modules to create fizzing shields, flickering flames and tons of rubble





STUDIO INSIGHT
Adam Moravanszky
Senior software manager

Nvidia's Swiss arm began life as Novodex, and was later acquired by Ageia, the company behind both the PhysX physics engine and acceleration card. Nvidia bought Aegia in 2008, and today it focuses on the renamed Nvidia PhysX engine, which has been incorporated into games such as *Batman: Arkham City* and *Metro: Last Light*. PhysX is also built in to Unreal Engine 3 and Unity, and Nvidia offers full support for the tech on PS4. We ask **Adam Moravanszky**, senior software manager for the Nvidia PhysX SDK engineering team, why he believes physics is gaming's most exciting area right now.

Physics seems to struggle to find a home, roaming between CPU, GPU and even dedicated cards. Despite this, it's a key topic at the moment, right?
Yeah, I think this is going to become a topic again, because we're working on cloud gaming now at Nvidia. It's a fixed platform from the point of view of the developer, who can know for sure what hardware the game is running on. For example, we're looking into accelerating massively multiplayer games' server-side physics a whole lot using GPUs.

If everything moves to the server side in the future, do you think there'll be a noticeable leap in physics complexity?
Again, the simplicity of the platform and the huge network bandwidth between each other means you can do very different kinds of interaction between players… You no longer have this division between server side and client side – it's all the same; it's all sitting in the same data centre. So a lot of the physics that used to be client-side – FX physics that aren't synchronised exactly between the different clients – can be now. [This] means you can do sophisticated vehicles, for example, which are exactly in the same place on each of the different players' views and have more complicated suspensions and so on.

A conversation that happens at the beginning of each new generation is the one about diminishing graphical returns – is that a big concern for you?
I know what you mean and I personally have anticipated this [issue] ever since I graduated back in 2001. Even at that time the rate of graphics innovation was less shocking than it had been, despite fundamental innovations like programmable shaders. A lot of stuff has happened with graphics hardware since then, but obviously it's not as shocking as going from EGA to VGA, where you suddenly had 16 times as many colours, right?

That's why I got into physics, because even what we're doing today is still incredibly primitive. Right now, any player that moves through your game world is effectively a box with more exact approximation being used to calculate whether you shot it. Most games are still doing canned animations for a lot of what they could be doing with inverse dynamics and dynamic simulation.

These are changes that you would notice – for instance, the fighting games that are out there where you have these beautifully shaded, screen-filling characters with nice physics for the hair or the clothing, but the gross movement is actually really predictable and sort of uninspiring. And the better the shading becomes, the more obvious it becomes that the collision detection and overall movements are fake. So there I see vast opportunities for innovation. ■


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WorldMags.net

Gbanga

The mixed-reality game studio that's turning cities into playgrounds



Founded 2007
Location Zurich
Employees 9
Key staff Matthias Sala, Julio Perez (founders), Chris Solarski (art director)
URL www.gbanga.com
Selected softography *Gbanga Zooh, Pilotifant, Gbanga Animals*
Current projects *Advocates Of Light, Bumble Bee, After Party*





Gbanga's mixed-reality social gaming transcends static environments; its team believe gamification must create products users genuinely enjoy







STUDIO INSIGHT
Matthias Sala
CEO and co-founder



Gbanga wants to go beyond merely allowing you to travel and play: many of its games require it. It describes itself as a mixed-reality mobile game company that works with businesses and councils to promote and educate. But rather than just gamifying brands, Gbanga wants to create games people will wish to spend time playing. We talk to CEO and co-founder **Matthias Sala** about the challenge of augmenting reality and why too many games look back, not forward.

What's your take on mixed reality?
Take *Mr X*, a mixed-reality spin on the boardgame Catch Me If You Can. We transposed it into reality for Zurich's public transport authority, where it's like hide-and-seek, in a way. One guy is the agent, and the group has to surround him to win. You only get partial information, such as which tramline he used or what point of interest he's observing. You look up tickets from five minutes ago, and then you can sort of find out or track down where he could be. You have to get to know the network. That's interesting for public transport authorities wanting to introduce people to services.

Do you have to target each game to a single location? Is that a challenge?
They work everywhere. We did everything with mash-ups. When you enter a new territory we create a world on the fly; we create local quests for certain areas so we have promotional or topical quests. It's tricky. It needs to grow like a virus; person-to-person – you want competitors in your area. To have something that grows automatically you must create gameplay with inherently viral aspects, whereas other mobile games can just have players invite Facebook friends and share their score.

Do you feel part of the game industry?
When we started we were mixed reality; now we fit the mobile space! We're still a mobile games company, with the same timeframes, development styles and technical issues. It only gets tricky with storytelling, scripting or level design – that's different. Many industry experts struggle with that – they want to copy, say, the browser game model. You can't think like that. Some things are in reality – a given – and you must build around them.

Gamification is an unpopular term – how do you feel about that?
The term 'gamification' is bad; used by marketing departments – I think that's why game companies hate it. We use it because it's a known term. It's about building a game that has desirable side effects but, at the end of the day, people who play those games will decide. If you have a crappy game, people won't look at it. If it's well done they won't care if it's called gamification or a serious game.

How important is it for people to play, in whatever form, even as they get older?
It's very important, though in German-speaking Switzerland some find it childish. But while playing games is frowned upon, people play with other things, like model trains or gadgets. In Japan, it's fine that grandma plays *Super Mario* – there's no, "Wow, that's crazy". It's interesting that many mobile games are retro, to target the people who played in the '80s and '90s. In a way that's good, but in another it's kind of anti-innovative. Young people play intuitively with new gadgets; they think every screen is a touchscreen. Soon they'll be teenagers and demand titles with all that built in. They'll be bored by a huge screen attached to a PlayStation because they can't touch it or get involved. I think that time is coming. ■

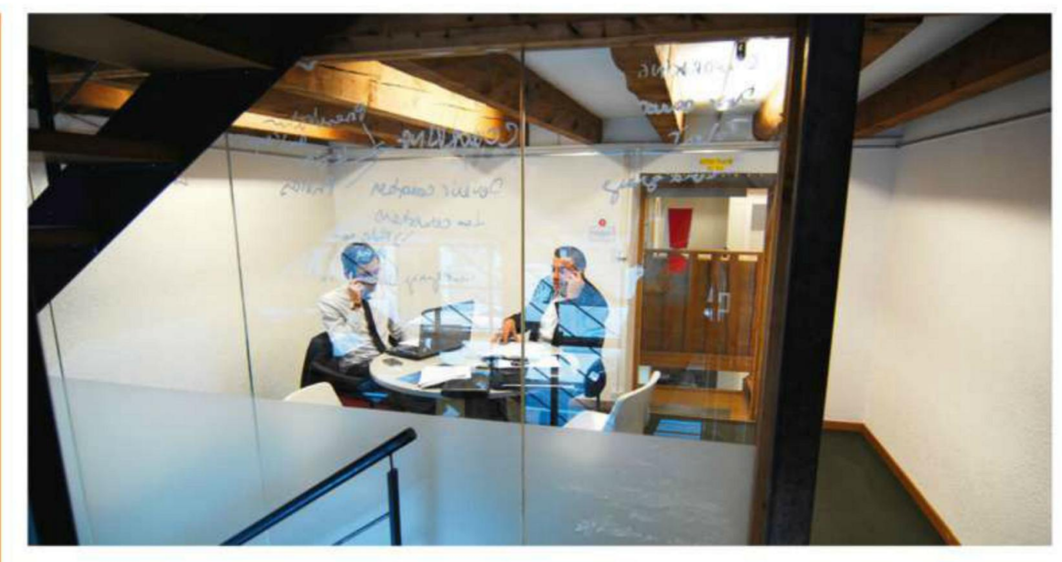


EverdreamSoft

The Geneva-based developer with a mobile card game that's spilling out into reality



Founded 2010
Location Geneva
Employees 10
Key staff Shaban Shaame (founder & CEO)
URL www.everdreamsoft.com
Selected softography *Moonga, Ben.exe, Sergent Bork*
Current projects TBC



After a highly successful three-year run for mobile-based card game *Moonga*, creator EverdreamSoft has decided now's the time to get physical







Rather than adapting an existing trading card game for mobile, EverdreamSoft has found itself operating in reverse order. Its card-based videogame game *Moonga* was released for iOS in 2010 (with Android and Facebook versions following), and has amassed 250,000 registered players in the three years since; now, the Swiss studio is now busy working on physical cards equipped with NFC (near field communication) chips in order to extend its creation into the physical world. Founder and CEO **Shaban Shaame** elaborates on the concept.

Why did you choose to create a card game for mobile?
When we started, the iPhone was out but the App Store was still yet to launch. I wanted to create something along the lines of Magic: The Gathering that I could develop by myself and was simple, strategic, but rich in terms of possibility and expansion. At that point it was innovative; now to say, "We do mobile games" maybe it isn't so much any more! But we were one of the first to use the free-to-play business model.

How will the physical cards work? Do they require a phone to play, or can you use them separately?
There's a number of different scenarios, but yes, the idea is that you can play without any mobile device. However, you can also have your physical deck and – with an iPad in the middle – you can choose a card, put it on the reader and the card will be played on the iPad. So, for example, if you go to tournaments then you register your deck of cards and have the match reviewed on the screen over the Internet.

When you say "readers", are you talking about another peripheral?
Yeah – readers can be anything, so it could be a phone or you could use a small carpet featuring detectors. This will be available from retail initially, or used at events. You can use most phones as a reader, except for iPhones, unfortunately. And you can pair an unlimited number of devices with the iPad, but *Moonga* is a twoplayer game. However, we might branch out in the future.

Has the success of *Skylanders* opened the gates for this kind of interaction?
Yeah, exactly. They did a great job with *Skylanders*. The web space is crowded, so if you want to promote a game it's hard. But with *Skylanders*, [Activision is] present in the toy as well as videogame arena, so it's a new area that's unused. They sell a lot of toys via this technology. So it's good, because you bring the videogame [to a space] where it wasn't and with your toy become something more. You can evolve, level up and when you go to a friend you keep your data. We want to do that with *Moonga*, storing each card's history, the player's story.

How will this data affect the cards?
We're still exploring the gameplay. But some things we've thought about include the timeline, so each card will have its own. In the game story, the card was created by an enchanter, and at some point it leaves the *Moonga* universe to come to ours. When it comes to the real world, as soon as I buy the card, or when I scan the card, I'll add to that story: this card was bought in that shop at that time. And, for example, if the owner is my friend, he can give me the card, I can scan it, and I'll give the card more power, evolve it – it's social. The more people that scan it, the more powerful it will get. ■


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Enraged Eraol
Knight of Shadows
Trading Card Game
Moonga
WWW.MOONGA.COM
Available on the
App Store
GET IT ON
Google play

Bitforge

The creator of Orbital also builds apps to make the world a better place

bitforge

Founded 2004
Location Zurich
Employees 8
Key staff Reto Senn (CEO), Andreas Hüppi (COO), Adrian Nägeli (CTO)
URL www.bitforge.ch



Bitforge's offices are a short walk from Zurich's Hardbrücke station

STUDIO INSIGHT
Reto Senn
Co-founder



Bitforge entered the mobile game market early, working with the likes of Vodafone and T-Mobile from 2004, but soon turned its attention to developing games for ad campaigns and charities. In 2009, the company's founders took a gamble and burnt through their remaining capital developing the smart, gravity-focused iPhone puzzle game *Orbital*. CEO and co-founder of Bitforge **Reto Senn** discusses some of the studio's calculated risks and its keen interest in developing games to raise awareness of important causes.

Did you consider the development of *Orbital* a risky endeavour?
Yeah, but it paid off and gave us a lot of credibility in the industry. People knew us. It was really easy, for example, for us to get in touch with Microsoft to publish the game on Windows Phone because when we contacted them their representative was: "Oh, yeah! I've got this game on the phone – it's great, we need to have it!"

Why did you decide to focus on making games for other companies?
When we started, [COO and co-founder] **Andreas Hüppi** and I wanted to work in the game industry, but there wasn't one in Switzerland! There were some advertising companies doing games but no real game companies. I made my first mobile game as a freelancer and it made some money, but instead of working for that company I decided to create my own studio.

With *ByeBye Mosquito* and *Amanzivision*, which raised awareness of malaria and water shortages, as well as aid for the respective causes, there's a humanitarian element to your work. Do you think games are a particularly effective way of tackling these themes?
Yeah, definitely. For an NGO it's a really different way to approach people… Games really help make people realise what the problem is.

It must feel good to be able to contribute to such high-profile charitable organisations through gaming.
We were actually afraid when [children's charity] World Vision approached us. They were like, "Yeah, we want you to make an app and a game". Of course we love to make games, and if someone gives us money to, that's cool. But we were like, "This is donation money. Are you really sure that this is the way you want to spend it?" But they were certain it'd work out, and it did!

Do you think there's a growing awareness from corporations, non-profit or otherwise, of the power of games?
Oh, certainly. Gamification is an expression of that. Everyone tries to take that power and use it. Andreas and I see it in our lives as well – we've both learnt so much from games. For example, all my English comes from games, originally. All those text adventures! ■

Zurich University Of The Arts

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Zurich University of the Arts

Founded 2007
Location Zurich
Students 2,500
URL www.zhdk.ch





Zurich UotA teaches its modules simultaneously, not term by term

STUDIO INSIGHT
Ulrich Götz
Head, Faculty of Game Design



Professor **Ulrich Götz** doesn't subscribe to received wisdom. Heading the BA and MA game design programmes at Zurich University Of The Arts, he has rejected the popular notion of specialisms for a more comprehensive approach to education. The university boasts a thriving research unit that focuses on serious games with health benefits, and the use of videogames in the arts. After a spell spent lost in the university's hallways, we talk to Götz about his idiosyncratic methods.

Why did you choose to make your course so broad?
At first, many people said, "Wow, does it make sense? Shouldn't you specialise in one or two areas? How can you can offer such a generalistic, broad approach?" But our goal is to develop fully functional games or prototypes, from concept through design and on to programming. We want all our students to have an awareness of, and skills in, this triangle of different fields – each student gets the full picture. He or she may apply to the course wanting to be a programmer or a designer, or perhaps they're a storyteller or good at coming up with concept ideas. But they will all have to learn the other aspects, too, and go through the same bottleneck, if you will. We really torture them! And I think what comes out of the bachelor programme is evidence we've succeeded. This holistic approach works very well on the bachelor, but a masters has to mean that you can specialise, which is exactly what we offer.

What sort of games have your students produced alongside their studies?
The prototype for *Daina: The Herbarium* was built from scratch in Unity by a team of two. It's an adventure game about exploration and planting gardens; all the game's textures were created by painting them with watercolours first. It looks stunning. And *Krautscape* is a racer in which the leader 'draws' the track as they go. But you can transform into a plane and take shortcuts – it was the designer's response to dealing with the natural advantage the leader has. Compared to other universities' achievements, these are quite stunning. Our students win many prizes – they've just won another at GDC.

Your approach makes sense for smaller projects, but the growing scale of major games calls for specialism, doesn't it?
I found a 1984 quote by [veteran game designer and GDC founder] Chris Crawford the other day. He said: "For this reason many people have attempted to form design teams consisting of a non-technical game designer and a non-artistic game programmer". Maybe that's less common now, but projects can still fail when programmers screw up the potential of a concept, or the concept guy comes up with crazy ideas the programmer could never fulfill. Our graduates will never face that problem, because they understand the limitations, and possibilities, of both disciplines. ■







The ChinaJoy Expo attracts thousands of gamers in its voluminous B To C Arena, giving local enterprises a platform to demonstrate their newest products and innovations



ChinaJoy Expo

THE SHANGHAI TRADE SHOW RETURNS WITH A NEW EMPHASIS ON MOBILE ALONGSIDE ONLINE EXPERTISE

Nowhere on Earth is online gaming bigger business than China, and no year was more important for the Chinese arm of the game industry than 2012. Having made a record $9.7 billion in revenue, some 90 per cent of which came from online games, there's a serious knowledge base here for this kind of videogame development.

The ChinaJoy Expo and Conference, events now in their 11th year, are where developers from across China and the world will gather to share their thoughts on online gaming, reveal what they're working on to local players and enhance their knowledge about everything from social games to network security. Western professionals who opt to join them in Shanghai in July will be able to make valuable new contacts, learn about this arm of the international game industry and exchange ideas, insights and solutions with their eastern counterparts.

This year, ChinaJoy events will be held from July 24–28, and run from 09:00 to 18:00. The various streams of the event are the Expo itself, which is split into B To C (business to consumer) and B To B (business to business) exhibition areas; the World Mobile Game Conference (WMGC), which aims to bring together industry leaders to focus on this fast-growing sector; the China Game Business Conference (CGBC); China Game Developers Conference (CGDC); and the China

CHINAJOY SPEAKERS



David Coghlan
CEO and managing director, Havok



Jae Hyun Bae
CPO, Ncsoft



Keiji Inafune
CEO, Comcept



William Ding
CEO, NetEase.com



Chi Yufeng
CEO, Beijing Perfect World Network Technology Co, Ltd



Edward Cheng
Vice president, Tencent Games



Peter Tseng
VP, GM of Greater China, EA Shanghai



Itzik Ben-Bassat
Chief of staff, Blizzard Entertainment

SCHEDULE

EVENT	DATE	VENUE	DETAILS
ChinaJoy B To C Expo (btocen.chinajoy.net)	July 25–28, 2013	Shanghai New International Expo Center Hall N1-N5	The Expo ChinaJoy Cosplay Carnival Miss ChinaJoy Beauty Pageant ChinaJoy E-sports Tournament Finals
ChinaJoy B To B Showcase (btoben.chinajoy.net)	July 25–27, 2013	Shanghai New International Expo Center Hall W 5	Development Tools Display Area Business Matching Area
China Game Business Conference (en. chinagbc.com.cn)	July 24–25, 2013	Kerry Hotel, Pudong, Shanghai	China International Browser Game Summit Overseas Development And Cooperation Forum SNS And Social Game Forum Marketing Forum Investment And Financing Forum Game Education Forum Game Ethics And Culture Forum
China Game Developers Conference (en. chinagdc.com.cn)	July 26–28, 2013	Kerry Hotel, Pudong, Shanghai	Keynote Online Game Session Social Game Summit Mobile Game Summit Future Summit Korea Game Developers Day Sponsor Session
China Digital Entertainment Congress	July 24, 2013	Kerry Hotel, Pudong, Shanghai	Lecture Face To Face Session Panel
World Mobile Game Conference	July 25–26, 2013	Shanghai New International Expo Center, Hall W4	The conference The B To B Area











Digital Entertainment Congress (CDEC). The full schedule (see above) details every event.

ChinaJoy 2013's new stream is the World Mobile Game Conference, an evolution of ChinaJoy's Mobile Entertainment Development Forum. Pitched at fostering collaboration and shaping the future of mobile Internet gaming, it promises to be an exciting opportunity to grapple with the challenges of this relatively young sphere of development. One hundred prestigious guest speakers will be invited to attend, and some 3,000 professionals are expected to join them to make inroads into the future of mobile.

The China Digital Entertainment Congress is an equally essential destination for those looking to unpack the challenges and potential rewards of doing business here. The forum also provides a prime opportunity for attendees to make links with high-level executives, since over 50 per cent of its audience is expected to be at senior management level or above. Its distinguished list of VIP speakers includes prominent Chinese government officials and influential local entrepreneurs.

If understanding the business side of China is your aim, the China Game Business Conference will prove invaluable, with ten forums based on the most active areas of the Chinese industry, all of

The WMGC promises to be an exciting opportunity to grapple with the relatively young sphere of mobile development

which are sure to be well attended. Last year, over 4,000 industry insiders from 20 different countries attended the ten sub-forums to hear talks delivered by some 200 speakers.

The Expo, meanwhile, is the largest in Asia, and attracted over 7,000 attendees last year, served by 200 exhibitors. On the B To C side, its mainstay events are the Miss ChinaJoy Beauty Pageant, ChinaJoy Cosplay Carnival and the Zhangjiang Cup ChinaJoy E-Sports Tournament.

The B To B area is where some 20,000 professionals will meet to take part in thousands of productive business meetings (some 4,000 were recorded in 2012, with deals worth $200 million settled onsite), make new acquaintances, forge alliances and discuss import and export concerns.

From a development perspective, the CGDC schedule is packed with talks to enhance your thinking about online, mobile and social development. The conference attracts China's top R&D talents, influential international producers, as well as domestic and international speakers. For example, last year's keynote speakers were David Coghlan, MD of Havok; *Mega Man* designer Keiji Inafune, now CEO of Comcept; and Jea Hyun Bae, CPO at Ncsoft, and a lineup of equal quality is expected this year. There will also be sessions on how foreign devs are tackling making games for the Chinese audience, anti-hacking techniques in online games, and more. ■



EDGE GET INTO GAMES 2013

IN ASSOCIATION WITH JOBS.EA.COM

Starting a career in interactive entertainment, with guidance from inside the videogame industry



Twelve months is a very long time in videogame development. When we surveyed the industry in 2012, Unity3D was beginning to make serious waves, while current-generation hardware continued a reign that's lasted the best part of a decade. Today, Kickstarter has turned game funding upside down, empowering both independent and high-profile studios to realise their most daring ideas, while Android titles are poised to reach TV panels through a new guard of microconsoles such as Ouya and GameStick. Not that the bigger players are standing idly by as, of course, this year has seen the announcement of next-gen tech from Sony and Microsoft. There's more disruptive technology, too, in the form of Oculus Rift, which finally makes virtual reality both affordable and, more importantly, convincing. On p174, we take a look at the state of the industry today, and what it means to be part of it, seeking insider advice from DICE, Ubisoft Reflections, The Behemoth and Simogo. Then, on p178, we talk to two recently employed graduates working at EA's DICE and Ghost studios to find out what it's like to start out in your first game job and how the reality differs from the time you spend in education. Next, beginning on p180, we talk to the course leaders making that education happen, covering south and north England, Scotland and farther afield. Finally, on p206, Sony details its work with students via its PlayStation First programme. ■

UNIVERSITY PROFILES























THE NEXT GENERATION

What are the challenges facing graduates as they come into an industry in transition?

PAULINE JACQUEY
Managing director, Ubisoft Reflections

NIKLAS FEGRAEUS
Lead designer, DICE



SIMON FLESSER
Co-founder, Simogo

Today's graduates are faced with an uncommonly steep learning curve. Coming into an industry in flux, as it heaves itself from one generation to the next, throws up all manner of additional considerations, problems to solve and, perhaps most pressingly of all, decisions to make. After all, where in this rapidly expanding machine do you hope to find purchase? And where do you want to end up?

"There is a huge disadvantage in the fact that you have new technology to master and utilise, as well as new player expectations that can turn the perception of quality on its head," warns **Niklas Fegraeus**, lead designer at *Battlefield* studio DICE. "It's a new creative territory you need to map, and doing so successfully requires great risk and effort."

Fortunately, he is quick to soften the blow. "On the other hand, the opportunity provided by a generation shift can be the greatest advantage imaginable, which, if [well] utilised, can make you a vital contributor to the future of gaming."

Crucially, there are more opportunities now than ever before, because while there's a significantly higher barrier to entry when it comes to securing your dream job in your favourite major studio, there are also many more routes into the world of game development than there ever used to be.

"Things are more segmented than they were in the past," says **Pauline Jacquey**, managing director of Ubisoft Reflections. "It used to be core/casual/kids, but there are more ecosystems now. Today, [the shape of that ecosystem] is more driven by distribution channels than the target audience: there are the big triple-A console games that only a few publishers can afford; the creative indie games that have been made possible by things like the App Store, Steam and crowdfunding; the opportunistic social and free-to-play games benefiting from the openness of the Internet; and some niche hardcore and high-quality social games."

Jacquey's list seems extensive, but it covers the vast diversity of today's videogames in only broad strokes, each category being home to all manner of sub-groups, combinations and mutations. And the task of creating them all requires the combined efforts of not only designers, programmers and musicians, but also HR and management, QA, and more recently roles such as community managers, server administrators, lighting experts, business analysts, economists and even experts in ergonomics. It's a dizzying territory to explore, but it's also one driven by the passion of those who define its borders.

"If you want to make games – and it's what your heart wants – you'll make them out of cereal boxes and soap if you need to," reassures **John Baez**, president and co-founder of *Battleblock Theater* studio The Behemoth.

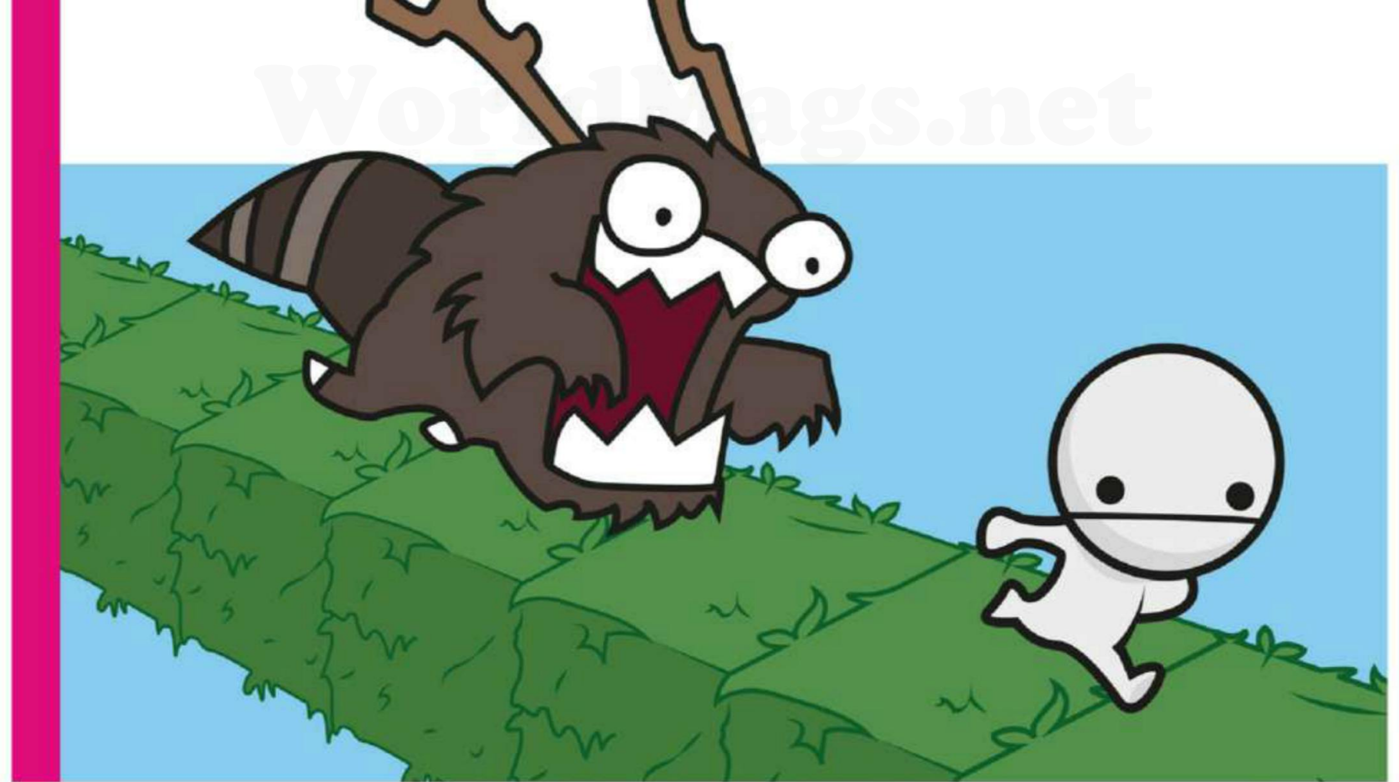
Assuming you still haven't finished that box of cornflakes, though, what other tools are at your disposal? One of the most obvious starting points today is Unity3D, a development environment and engine that's continually gaining in functionality and popularity. It provides the option of creating games through a menu-driven interface or full-on programming environment, the Asset Store provides pre-made 3D models and plugins (not to mention a potential source of revenue for creators), and you can export your code to almost any format you can think of. All this, and the basic package is entirely free.

And there are less powerful, but still free and popular, alternatives such as YoYoGames' GameMaker, which is now in its eighth iteration; PyGame, which will help you learn to program in Python; or, for the complete beginner, Flash game creator Sploder.

While Unity will provide you with excellent experience – indeed, many indie developers and larger studios now use Unity to produce all or part of their games – traditionally used art packages such as 3DS Max, Maya and Photoshop are still the mainstays in most major studios. And knowledge of C++ and C# will still prove invaluable, whether you're a programmer or not. High-end PCs and next-gen consoles have both the memory and processing power to handle much more detailed environments and character models, so digital art-creation software like ZBrush and Mudbox is becoming increasingly important. And don't forget that many studios license engines and tools like Crytek's CryEngine 3 or Epic's Unreal Engine 3, both of



Simogo is a portmanteau of the names of its two founders, Simon Flesser and Magnus 'Gordon' Gardebäck. *Year Walk* (pictured), a terrifying and clever adventure game for iOS, is its latest title



which can be downloaded at no cost for non-commercial use.

But a technical mastery of your tools isn't necessarily the most important thing. "Software knowledge is good, of course, but it's also something you can train quite quickly," says Fegraeus. "Learning new software is actually unavoidable in today's triple-A landscape, where custom software is part of almost any development process. The important thing is to have a master's eye for quality and detail. You need to have an edge, to be amazing at something. You need to have a strong talent that makes people go 'wow' when they see what you can do."

Simon Flesser, one half of *Beat Sneak Bandit* and *Year Walk* creator Simogo, agrees. "I think more all-round skills are preferable, rather than knowing specific software. For example, knowing your way around the basics of film editing or motion graphics is definitely a plus to create good proof of concepts. But unique, out-of-the-box thinking is more important than amazing skills. Skills can always be developed, but that 'feel' [for making games], that's hard to come across."

Historically, there has been an inherent disconnect between the fast-moving game industry's requirements and more formally structured education's ability to provide for it. But, as you'll see over the following pages, there are many universities today that are working hard to remain reactive, and relevant, to the realities of modern game production, offering a broad range of game design and programming courses. Do developers think it's enough?

"I think education's closing the gap, especially now that the industry is maturing and you can have people with decades of experience sharing their knowledge," says Fegraeus. "It's still a difficult issue, though, since things are still moving forward so fast – especially in terms of technology and team sizes. The other really important point is that game development is a work of passion, and education constantly needs to compete with passionate individuals who spend their free time teaching themselves, developing extremely deep skills within their field. So far, a great portion of game developers [began their careers by] spending time passionately modding or coding on their own without any game-related education. I believe that this is changing."

Jacquey points to what she sees as a global, and combined, effort from game companies, government and universities and other schools to further refine those

"Education's closing the gap, especially now that the industry is maturing and people with decades of experience are sharing knowledge"





The Behemoth's multiplayer platform brawler *Battleblock Theater* (top) took five years to make, following *Alien Hominid* (centre) and *Castle Crashers* (above)



CHALLENGES AND OPPORTUNITIES



JOHN BAEZ
President,
The Behemoth

relationships. Ubisoft Reflections has close links with a number of universities, including Teesside and home of Dare To Be Digital, Abertay. The studio is also currently working on a government-supported initiative that aims to link its internal "expert training programmes" with wider education. But there are still some skills graduates aren't bringing with them to their first jobs, foremost among which is source control (also sometimes known as version control or revision control), a method of keeping track of changes made to code and documents.

"That's one field that's not taught at all in universities, but that is used by 100 per cent of a dev team," says Jacquey. "We use [software called] Perforce at Ubisoft, and if applicants arrived with a good knowledge of [that program], it would definitely give them a head start."

Though you may have got the impression that every role in the game industry is oversubscribed, that's rarely actually the case. Right now, our interviewees variously cite a lack of programmers, UI (user interface) artists and programmers, ergonomists and SFX artists. Naturally, the categories in such a list ebb and flow continuously.

But assuming you've got a knack for game or asset creation, and you're able to handle the relevant tools, there are still other considerations to take into account if you intend to start your own studio or singlehandedly code The Next Big Thing on iOS. Flesser reveals that, as a small studio, only half of Simogo's time is spent actually making games. Without an admin department, someone has to get through those emails and tax returns.

Funding a game is a more significant hurdle than keeping on top of admin, of course. There are many options for doing so, but one method that can't be ignored today is crowdfunding, which has risen to prominence thanks to the high-profile success of projects on sites such as Kickstarter and Indiegogo. Crowdfunding, in combination with the similarly democratising effect of digital distribution, has allowed the riskier and idiosyncratic ideas associated with smaller projects to flourish.

"It enables people who dream of making games to have more viable options when trying to realise their dreams," says Fegraeus. "Regardless of whether you want to become the new Kojima or the new Notch, there's now a visible path to that goal."

It's an intoxicating idea, but, as Flesser warns, it could be worth gaining some experience before you try to become the next Phil Fish. "[Crowdfunding] has created this notion of 'everyone can do it'. While that's true to some extent, and it's certainly a great mindset to have, a lot of really great creators got their experience from the traditional industry.

> "Regardless of whether you want to become the new Kojima or the new Notch, with crowd-funding there's now a visible path to that goal"

"No matter how much you study, there's really nothing like hands-on experience. And, honestly, working for The Man for a few years will probably be a great way to see how you would do things differently. Try to see that those early years with art directors, producers and suits breathing down your neck as espionage!"

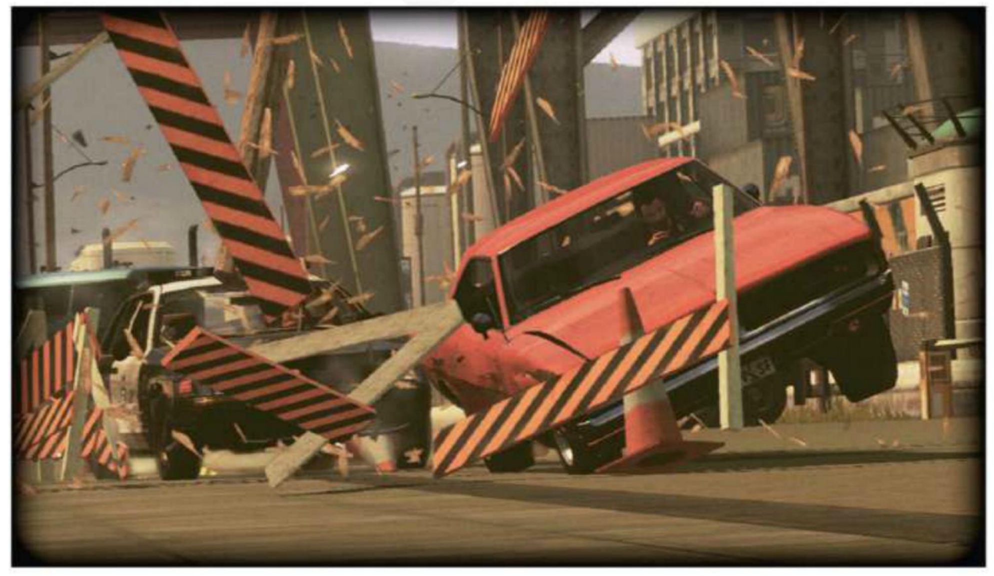
But is indie and mainstream development really as polarised as it used to be? It's increasingly difficult to define what indie really means nowadays, in a world where Kickstarter continues to fund startups and vanity projects without discrimination, scalable tools like Unity3D are used by individuals and teams alike, and budgets for downloadable games – mobile or otherwise – soar.

"Since the industry has not agreed on what is 'indie' or not, it's a difficult one," says The Behemoth co-founder and art director **Dan Paladin**. "If we were to enter the IGF again, I think there'd be some people raising an eyebrow. And if Double Fine enters, is that OK? What about if Valve enters? All of these companies are independent, but which ones are 'indie'? All? None? Some? If the company has over ten employees, is it no longer 'indie'? What's the budget cutoff before you're not indie any more? What sorts of funding or partnerships are OK?"

"I think it's all a bit fuzzy," says Flesser. "The word 'indie' is used so broadly that I don't even know what it



DICE's FPS *Battlefield 4* is a technological tour de force, requiring a large dev team. "If you can't function in a team environment where you sometimes need to make sacrifices and compromise, game development is going to prove extremely tough for you," says Fegraeus



Ubisoft Reflections' *Driver San Francisco* introduced a brilliant, and surreal, possession mechanic to the Hollywood chase sequence

means. Some people talk of it as a sort of 'indie spirit', while others see it as being financially independent. But, again, I think it's more important to have ideas people – people who are just generally creative – if you're a small company rather than a bigger studio."

Fegraeus is less sure that the definitions have shifted to any great extent, but worries that attitudes towards the two camps have. He laments what he sees as a widening cultural divide reminiscent of that seen in the movie industry, where big-budget productions are sometimes looked upon with no small amount of disdain by the self-proclaimed sophisticate indie scene. While the majority of players are probably isolated from such prejudice – we can't imagine many gamers snubbing *Battlefield 3* just because they've recently played *Dear Esther* – it may well affect new developers' aspirations.

"I personally hope this has a very limited effect on people looking to break into the industry," Fegraeus says, "as I can't see these judgmental attitudes as anything but bad."

But whether you're an auteur exploring the breakdown of a relationship through the medium of platforming or an artist creating the metallic texture for a bullet in the latest blockbuster FPS, you're still following your passion and making a game. And that, after all, is why you're reading this article. So, does the added complexity of development on next-generation PCs and console hardware, and the increasingly competitive jobs market, mean that it's harder than ever before to bag that dream job in the game industry? Or does such a diverse spectrum of roles and ways to make games actually mean it's now easier?

"I think it's easier," says Fegraeus. "By that I don't mean it's *easy* – far from it – but considering the constant growth of the industry as a whole, there are simply more options and opportunities than before. It's an extremely competitive space, though, as evidenced by all the heartbreaking stories of studio shutdowns and commercial failures that happen quite regularly. There's a saying that 'you're only as good as your last title', and this is very true. It's particularly difficult to survive on old merits in the game industry, and you need to constantly push yourself in order to stay relevant and successful."

Jacquey: "Well, I probably wouldn't have become a producer at 23 if I [started today rather than] in 1997. But back then, there was little support because we were all working out what it takes to make great games. There's much more support now – teams are more structured and when you start, you have a manager. Young team members get constant feedback and training, too. So I would say it's easier to work and feel supported, but today people usually follow more structured career paths than 15 years ago."

Baez has one final thought on the matter. "For super-creative people who have always wanted to be in the industry and worked hard to get there, it's probably easier!" he says. "For people who want to be in the industry because they think it might be a fun thing to do versus working at local grocery store, it'll probably be tougher than before!" ■


Ubisoft Reflections is a UK studio, but it's working with Ubisoft Montreal on open-world title *Watch Dogs* (above)



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EA

The truth about life inside the game industry according to rising stars at EA's DICE and Ghost studios

DENNIS BRÄMVALL
Junior gameplay designer, DICE
www.dice.se

LIZETTE STENQVIST
Graduate VFX artist, Ghost
www.ghostgames.com

When you're on the outside looking in, the game industry is a difficult environment to gauge. Tales of killer crunches, legendary knees-ups and creative ecstasy abound. But where does development fantasy end and the reality kick in? We ask **Dennis Brämvall**, a junior gameplay designer at DICE, and **Lizette Stenqvist**, a graduate VFX artist at Ghost, what it's like to work in games.

"I think with the success of *Battlefield*, DICE has really matured as a company and learned how to value those working here. There's a lot less crunch, good flexibility and plenty of healthy food and activities," says Brämvall, who was taken on by EA six months ago while in the latter stages of his MSc at the University Of Central Florida.

Brämvall is now designing levels for *Battlefield 4* and is aware of how fortunate he is to have a stable, enjoyable job. "Probably the worst part of the industry," he says, "is a lot of extremely talented people you care about don't get picked up, even though they deserve to be."

Ghost is based in Sweden's second-largest city, Gothenburg, and was set up to create games using the Frostbite engine. Its first project remains a mystery, but Stenqvist has been there a year now, having graduated from digital learning institute Hyper Island. "I truly love the fact that we're creating worlds that people can escape to, and even though I'm sometimes just making the dust puffs, I'm still a part of it, and I'm damn proud of that."

Stenqvist believes that one of the most important things when trying to get hired is your ability to communicate. "It's not just about a good showreel, it's about being a person that people want to work with. It's a good idea to talk a bit with the people at the company first. Get to know them and their wishes."

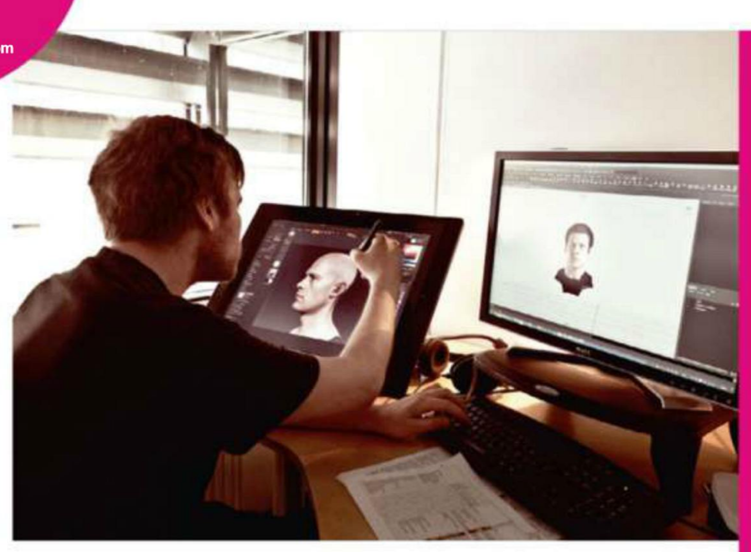
Brämvall concurs: "Without a doubt, the most important thing to learn is how to network and connect with people. Coming out of school, companies won't hire you based on credentials, they'll hire you for your potential, talent and willingness to learn. Prove to people first that you're a cool person with the right mindset – you can pick up the tools later."

"Some companies ask you to make something when you apply, so it's good to have that one engine that you know your way around"

That's not to say there isn't an edge to be found in learning a tool, and Brämvall believes Unreal Development Kit is a good choice. "Some companies will ask you to make something for them when you apply, so it's good to have that one engine that you know your way around. And UDK is well-respected all over the world."

But don't become so focused on getting your first job that you forget to take full advantage of your time in university. "Students need to let go of the 'It's just school' mentality and put some thought, effort and love into their work," says Stenqvist. "Don't look at it as an assignment, see it as an opportunity to evolve. See your classmates as great resources of knowledge and use them to brainstorm ideas and just have fun.

"For me, school was a great simulator for workflow, constructive criticism, tricky situations, people management… I especially loved that it helped us form a network before even entering the industry. The contacts that I made back in school are still valuable to me, and we keep each other updated on everything from graphics and jobs to housing and meet-ups." ■



Ghost is an offshoot of DICE (pictured here), which is based in Stockholm and is known for making the *Battlefield* series. Ghost, meanwhile, is currently creating an unannounced game in Gothenburg



GOLDSMITHS, UNIVERSITY OF LONDON

Offering classical training in games from developers working at the cutting edge of the industry

FREDERIC FOL LEYMARIE
Co-founding professor
www.gold.ac.uk

WILLIAM LATHAM
Co-founding professor
www.gamesgoldsmiths.com

The world-famous college that helped launch the careers of artist Damien Hirst, fashion designer Vivienne Westwood and musician Damon Albarn has been making a name for itself in games. Goldsmiths offers an MSc in Computer Games And Entertainment centred on programming, maths, business, physics, animation and AI learning, where teaching is delivered by Sony coder Andy Thomason alongside other professionals and leading academics. The course's co-founding professors, **William Latham** and **Frederic Fol Leymarie**, tell us about the core skills they're teaching students and their enviable record of getting graduates into industry jobs.

What are Goldsmiths' key attractions for game students?
William Latham Our programme flows into the industry and focuses on placing students with independent developers and on triple-A projects. It's the first Masters to be accredited with the Creative Skillset Tick in the Greater London area, due to this commitment to giving our students a launch pad for a successful career. Our lecturers have tens of years of experience in the industry and still practise on current and emerging titles and consoles.

Why is big-budget console development still important for students?
Frederic Fol Leymarie Triple-A development is a bit like classical music, and Unity and WebGL are the emerging artists. Some of the greatest rock groups of our time have been composed of classically trained musicians, and it's imperative that students are well-versed in triple-A to become industry professionals.

Goldsmiths is famous for its creativity. Would you rate it above technical skill?
FFL It definitely takes a little of both, although it's much easier to get a job off the back of a solid technical education than from a pure design background. Some of our students come from a design background but learn programming as a way to stand out from the crowd.

What skills should students prioritise?
FFL The core subjects of algorithms, maths and programming are what employers really want to see. If these foundations are there, they will have to spend far less time getting their new recruits up to speed. We encourage our students to demonstrate their creative flair through examples of their coursework too. To gain experience, we hope to place all students in industry for the summer or give them an industry-supervised in-house project.

What are the biggest challenges facing today's students?
WL The industry is more competitive than ever, with many more students wanting to get into the industry. Graduates are often refused positions due to lack of experience and are left frustrated that they can't get their foot in the door. To counter this, we offer placements across some of the UK's most exciting gaming institutes. Students work with their lecturers – who are still working in the industry – to secure work placements and gain valuable experience.

"Some of our students come from a design background but learn programming as a way to stand out from the crowd"

Where have Goldsmiths' games graduates been employed?
WL We have former students at Sony Worldwide Studios, Supermassive Games, We R interactive and Geomerics. And a few like Simon Grinberg at Dream Farmer who run indie studios as well as stars such as Patricia Afari who makes games for children with autism, to name but a few.

Do you work with firms outside of the game industry?
WL We love game hack events and had a great time working with the world-renowned advertising agency M&C Saatchi, who collaborated with staff and students for a 48-hour event dedicated to making and developing interactive games. M&C Saatchi were impressed by our students' software engineering skills. Each of the teams showcased original games thinking – despite battling sleep deprivation! ■



BRUNEL UNIVERSITY

A West London university that teaches its students to be flexible to succeed in a constantly changing industry

JUSTIN PARSLER
Lecturer
www.brunel.ac.uk

London's Brunel University offers a range of courses within its school of computing, from bachelor level up to PhD, but many of them share the same focus: game design. Brunel's computing curriculum is unashamedly tailored towards aspiring designers, concept artists and creative producers, and can count industry veteran and former Lionhead Studios director Steve Jackson among its lecturers. Just a few of the courses on offer include a BA in Game Design, a BSc in Computer Science (Digital Media And Games) and an MA in Digital Games Theory And Design. We talk to one of the Game Design course lecturers, **Justin Parsler**, about the institution's focus on design, its postgraduate research programme and its celebrity lecturer.



Why did you decide to prioritise game design over the more technical aspects of game creation?
We do offer courses related to programming in Computer Science, but we're out and proud when it comes to teaching design and the last thing we want are students coming on the course with false expectations. To give you an idea, our industry or games academia employment rate for the MA in Digital Games Theory And Design is over 60 per cent, which suggests to me that we're doing something right. We're an industry-facing university and are tailored around employability. We teach skills such as communication, pitching and teamwork as well as [crafting] rules and world design, narrative structure, mechanics, loops, monetisation… Graduates are ready to hit the ground running and to be immediately useful to any company that hires them.

> "Our industry or games academia employment rate is over 60 per cent, which suggests that we're doing something right"



Can you tell us more about your postgraduate research community and its work?
Research underpins much of what we teach at Brunel and the team includes internationally renowned pioneers in the academic study of games. The teaching team has collectively authored a wide range of books and articles, mainly around the formal features of games and the way they construct a player's experience. Graduates of our doctoral programme are now teaching games and games studies in higher education around the world, too. And our dedicated [games] lab is a perfect place to exchange ideas, test out games and play together.

Steve Jackson is a high-profile name to have on board. How much involvement does he have with the course?
Obviously, having his name associated with the course helps our credibility, but he's also a hands-on teacher. He teaches a whole variety of business-orientated material to the MA students and, to a lesser extent, the BAs. He arranges most of our guest speaker programme, too, as he has the best address book in the business! And he marks student work, including pitches, he attends course meetings and is generally fully involved in the whole process.

What do you think it takes to be a good game designer?
Well, anyone can come up with a 'dream' game in their heads. Making something that will actually work in [a business] context is much harder. Good designers are able to devise games that will work with the platform, for their particular audience and within the set budget. And they need to be able to communicate extremely well. They need to be able to pitch concepts to clients, publishers and players; to explain to a programmer precisely how much damage a fireball does to an orc in a forest, and what that orc and forest will look like to an artist. But then again, a *really* good designer probably won't be making games about orcs in forests being hit with fireballs! ■



SOUTHAMPTON SOLENT UNIVERSITY

Indie development gets its own course at a university that understands today's shifting development landscape

DAVE HORNE
Senior lecturer
www.solent.ac.uk

PETE AKRILL
BA tutor
www.solent.ac.uk

Starting this year, Southampton Solent is splitting its game development teaching into mainstream and indie tracks. Its BSc in Computer Games (Software Development) updates 2012's game development course and places its focus on the technical specialisations that will set graduates up for a role in a large studio. The brand-new Computer Games (Indie), meanwhile, concentrates on game-making tools as well as business and entrepreneurial skills for those who want to go it alone – or at least in smaller packs. In addition to these two courses, there's also an art-led BA in Computer And Video Games available. Senior lecturer in computer games development **Dave Horne** and BA tutor **Pete Akrill** explain more.

Why did you decide to create a separate indie track?

Dave Horne There's definitely a shift in focus towards independent development that we can't ignore. So we consulted with indie companies and that certainly helped us come to the decision to create the new indie course, as well as providing input about the relevant content for it.

Pete Akrill The game industry is always in need of talented individuals who have great self-motivation and the ability to work well in a team with other artists, programmers and producers. The indies need all these skills as well as a good business head and a fantastic idea. The industry is definitely not interested in people with a 'great game idea' and nothing else.

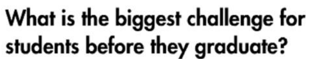
How much crossover is there between your courses?

DH Both courses operate on the assumption that prospective students may not know exactly what career they want after graduation, and that their experiences on the course may influence and change their expectations and decisions. So we ensure both courses are closely linked, with opportunities for students to switch between them as they begin to understand what direction they really want to go in. There's a broad set of options in the third year that allow students to specialise in areas that they find most interesting and that may be useful for their future careers. A student of Software Development would be perfectly able to set up or join an indie company, while Indie students would be well prepared to join a large games studios.

Tell us about Solent Creatives.

DH It's an initiative that supports students who want to start their own businesses, with small startup grants, access to cheap office space, equipment and software loans. The students on the computer games courses form small teams as early as the start of the second year and use Solent Creatives to help them set up a company and experience running a business before they even graduate!

> "Students form small teams as early as the start of the second year and use Solent Creatives to help them set up a company"



What is the biggest challenge for students before they graduate?

PA Money management: moving out for the first time and discovering the real world! However, with indie games and Internet initiatives such as Kickstarter and Humble Bundle, as well as the influence of the freemium and mobile game markets, students can still play innovative games without emptying their wallets!

DH One of my favourite moments was when a bright student we had was really struggling to understand programming. Halfway through the year, during a lesson, he jumped up onto a table and started dancing a jig, shouting something along the lines of "Yes! I get it!" So we must be doing something right! ■





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BSc (Hons) Computer Games (Software Development)
This course delivers a programming-oriented approach to games development, focusing on technical aspects such as game physics, AI, gameplay and design. If you're a keen programmer looking for a career in developing games, tools or mobile/web apps, this is the degree for you.
BA (Hons) Computer and Video Games
This Skillset-accredited course is aimed at artists looking for a future creating CGI, characters and environments for the latest blockbuster games. You'll learn about underlying technologies and the production pipeline, and develop a portfolio ideal for a career as an environment artist, character artist or technical artist.
BSc (Hons) Computer Games (Indie)
Combining development and entrepreneurial skills, this degree is designed to provide all the knowledge and experience you'll need for starting your own business and planning, creating and publishing your own games.
BA (Hons) Computer Generated Imagery
This highly practical course teaches you how to create high-end 3D graphics for a broad range of disciplines. Using the latest industry tools, you'll develop specialist skills in your chosen field and an industry-relevant portfolio – making you highly employable as a CGI visualiser, 3D modeller, or concept artist.
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Email ask@solent.ac.uk
Southampton SOLENT University
creative skillset
Image by Darren Tucker, second-year student, BA (Hons) Computer and Video Games

PLYMOUTH UNIVERSITY

Plymouth aims to produce creative developers with a technical edge

DAN LIVINGSTONE
Associate professor
www.plymouth.ac.uk

When *Elite* creator David Braben and other luminaries lamented a general skills gap between videogame courses and industry requirements, Plymouth University responded in style. It launched a BSc (Hons) in Computing & Games Development, created an in-house studio and forged direct links to industry to ensure the programme produced skilled, creative developers. Here, course creator **Dan Livingstone** explains how Plymouth aims to ensure students are kept up to date while future-proofing their skillset.

Why choose Plymouth?
Our university has invested heavily in new buildings and facilities on the main campus. We have five-star research groups contributing specialist modules to our undergraduate programmes and we have a reputation for enterprise and supporting student initiatives. We have an in-house development team, the Interactive Systems Studio, which is active in the indie scene through developer meet-ups, game jams and exhibitions. We also develop products using the tools and methodologies we teach our students. We know what it takes to take a project from an initial concept to a viable product and all the stages in between.

What can students expect from your core degree?
We offer a BSc (Hons) in Computing And Games Development, a full-time course over three or four years with either a paid summer internship or a one-year paid industrial placement before entering the final year. We also accept direct entry into our final year for students with strong programming ability and a games-related portfolio. Our USP is that we preach what we practice and practise what we preach. We generate small studios, startups and indie developers with highly transferable skills for new and emerging games-related sectors, from small indie releases to serious games, simulation and training.

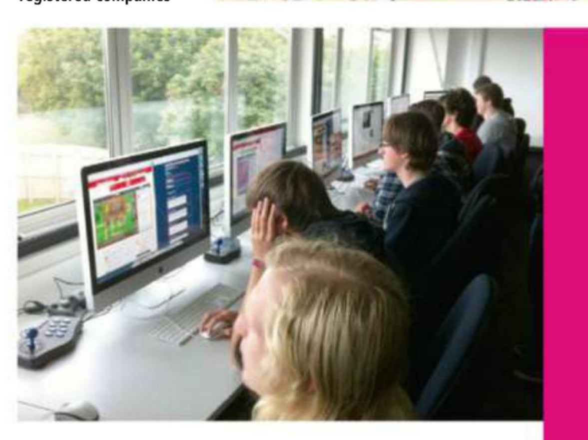
What other courses do you offer?
As a School of Computing and Mathematics we also have a BSc (Hons) Computer Science degree with which we share some core programming modules. We also have courses in Information Security, Networking, Robotics and so on.

How do you respond to such a fast-changing industry?
In many cases, [formal education] moves far too slowly. And numerous courses jump on the bandwagon seeing an opportunity to boost student numbers, but fail to understand this fast-evolving sector. That's why our course is structured with a balance of core programming modules delivered by Computer Science specialists and development workshops featuring guest input from industry veterans and our in-house team who are active in the sector. We're building products for internal and external clients using the tools and services currently used in the industry. Our first indie release for iOS is due later this year and features an original core mechanic, a strong graphical style leveraging Unity for the base engine, Scaleform for UI and Articy:Draft to structure and balance game elements and pivotal tracker.

> "I like to think we generate creative developers who have a technical edge but understand the complexities of making a great product"

Do you think students should focus on technical or creative skills?
It's a symbiotic relationship. I like to think we generate creative developers who have a technical edge, but understand the complexities of making a great product. They will have tried their hand at every role involved in making a game, from concept art, modelling, gameplay and level design to programming, debugging, testing, quality assurance, project management, client handling, revenue modules and distribution. They respect and value the full team contribution required to make an impact in the sector. In a nutshell, there is a balance of concept, design and implementation with engaging core gameplay and robust efficient code. ■

RIGHT **Tricade is a prototype 'arcade platform' and dock for multiplayer games on mobile devices. It was made during a team project that sees students form mock-up companies, many of which go on to become registered companies**



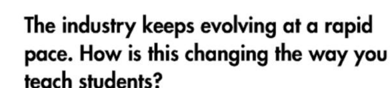


BOURNEMOUTH UNIVERSITY

A seaside university with strong ties to the game industry and an approach to teaching unbiased by platform

DR CHRISTOS GATZIDIS
Senior lecturer & framework leader, CT
www.bournemouth.ac.uk

That homeward dash when the summer holidays begin might not be quite so urgent if you're studying at Bournemouth University, what with its seaside location, the temptation of all that ice cream and a sizeable arcade near the waterfront are within easy reach. During term time, however, Bournemouth University offers two BScs: Games Technology and the newly validated Games Programming course as well as an MSc in Computer Games Technology. We caught up with senior lecturer in creative technology **Dr Christos Gatzidis** to ask about the university's close ties with industry and how it creates graduates who can be very employable.



The industry keeps evolving at a rapid pace. How is this changing the way you teach students?
Increasingly we're finding basic business skills are just as important as technical skills, and that's something we offer on all our courses, from undergraduate to postgraduate. But, of course, it all depends on which area of the industry they wish to work in, whether that is art, level design, programming – they are all vastly different from each other. A good knowledge of C++ and strong maths remain just as essential for programmers, for instance. In short, our courses are specifically designed with employability in mind, and are constantly kept up to date. Moreover, we constantly invest, based on our increasingly growing numbers, back into the course with new equipment and also additional academic staff.

> "We have an industrial placement year that allows students to go out and work for a studio or even set one up themselves if they so wish"

It's important, then, to keep a close eye on the industry?
As close as we can! We've recently had our annual industrial advisory panel, in which companies such as Climax Studios and Havok participated. We use the panel to seek advice and guidance on course structure and content from leading companies in the sector. We have regular guest speakers, too, from companies including the likes of SCEE, Microsoft, Reflections, Criterion and Ninja Theory.

Do your students benefit from any direct industry contact?
We have an industrial placement year, sandwiched between the second and fourth year, that allows students to go out and work for a studio domestically or abroad, or even set one up themselves. It's an important part of the degree, and we really do see students coming back transformed for their final year.

Do you think it's harder for students to find a job in the industry today?
There are many challenges. The game industry is hugely competitive and while it's very rewarding when you eventually land that first job, it can be tough to break in initially – particularly for a young graduate fresh out of university. Combined with the ever-changing nature of the game development business, it can become quite an arduous task – this is why a good education, which is externally facing and driven by employability, is so important.

What about developing for next-generation consoles – how does that affect the learning curve?
Many of the core skills remain unchanged, which reaffirms the approach we've always taken. Our courses are quite platform-agnostic as we focus on the core [programming] skills rather than just being a training course. We aim for transferable knowledge throughout. A number of our students had no trouble picking up Unity and completing an entry for this year's Get Into Games Challenge, despite never having worked with it in the past. That said, we mostly use C++ for programming, while on the engine front we use the Unreal Development Kit quite a bit. Recently, we've started exploring the use of CryEngine at postgraduate level. For modelling and animation we use 3D Studio Max, Maya and, in the final year of Games Technology, ZBrush. ■







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SOMERSET COLLEGE

An institution with Victorian origins, but a very clear focus on the future

SAM BATTEN
Curriculum area manager
www.somerset.ac.uk

Somerset College is based near the centre of Taunton and has a history reaching back as far as 1856, when it was known as the School Of Art And Science. It currently offers a two-year foundation degree in Computer Games Technology that can be topped up to a BSc (Hons) by staying on for a third year. The course covers a broad range of disciplines including 3D modelling, animation and character rigging, audio production and design. As a Peter Jones Enterprise Academy, Somerset College can provide expert help for students looking to set up their own businesses. Curriculum area manager **Sam Batten** talks up the importance of self-promotion.

How can graduates stand out from the competition today?
We support our students in the development of their entrepreneurial skills, portfolio presentation and networking skills. With 25 per cent of the games workforce [being employed] on a freelance basis, it's key that students know how to promote themselves, showcase their skills and use social media to promote themselves, as well as develop and maintain contacts within the industry.

Why did you decide to split your degree into foundation and top-up years?
Flexibility. You might want to take up employment or undertake an internship at the end of your foundation studies, and this way you can. And it's worth mentioning that students also have the option of achieving their degree on a part-time basis.

Your course covers a great many areas of study – is that a challenge?
With our programmes, we aim to develop both the technical and artistic skills of our students. And with such major growth occurring in the industry, particularly in the mobile, indie and small studio pathways, we strive to ensure that our learners have a robust skillset which meets both their career aspirations and the needs of [the] creative media sector. All of our students undertake work placements, which helps enhance their employability, and they create their own games, too – this year our students have been working on a game with the British Red Cross as well as Somerset Wildlife. We also have excellent employer links and a programme of guest speakers.

Other than studying their chosen field, how else should students prepare themselves for the industry?
It's *really* important to keep yourself up to date with what's happening in the industry, which is currently in very exciting times. You need to be aware of what job roles are out there and understand how the industry and the game development process works. To be truly successful, you need to be proactive, seek opportunities and not get disheartened if things don't go to plan. Every experience that you have provides something to learn from.

From your annual intakes, can you see any evidence of the industry's gender bias evening out?
We're pleased to report a year-on-year increase of female game developers, which is fantastic, and a development we are excited to shout about! We have both female and male lecturing staff on our games programmes, too, so we hope that this serves as an attractive [advantage] to potential applicants.

How do you promote the south west of England, whose game dev scene isn't as high-profile as, say, London's?
The south west has a great number of small indie games companies as well as being a fantastic location to learn, with excellent transport links to cities such as Bristol, Bath, Exeter and Plymouth. We attract students locally, regionally and nationally and they all enjoy their time at Somerset College and make the most of what the location can offer. We have a real community feel and students feel respected and looked after. ■

> "To be truly successful, you need to be proactive, seek opportunities and not get disheartened if things don't go to plan"





UNIVERSITY OF DERBY

A fast-evolving game development hub with its own enterprise centre and regular expos

DR TOMMY THOMPSON
Programme leader, CGP
www.derby.ac.uk

PHIL MORRIS
Programme leader, CGMA
www.derby.ac.uk

Consisting of former game developers, the University Of Derby team offer a BSc in Computer Games Programming and a BA in Computer Games Modeling And Animation. The university also has its own enterprise centre, which regularly provides a home for the companies its students set up. Computer Games Programming programme leader **Dr Tommy Thompson** and Computer Games Modelling And Animation programme leader **Phil Morris** set out their next-gen approach.

Everyone who teaches on your courses has had a previous career in game development. How does that experience manifest itself?
Dr Tommy Thompson Our team is very hands-on and we promote the individual thinker. We inject a lot of our own experiences into what we teach. We have a lot of extra-curricular events that run throughout the year, too, including game jams, Brown Bags – which is a lecture series from the students themselves – and, of course, the Games@ Derby Expo.

How are work placements pitched – are students expected to find their own, or do you work with partners?
Phil Morris Unlike CGP, where work placements are mandatory, they're optional for CGMA. The students have a placement officer for overall advice and as far as helping them get placements goes, we do what we can – if we see jobs posted, we'll put them up on the CGMA and CGP Facebook pages. We also have contacts in the industry who from time to time have roles for students which we also post on the site. Some of our students decide to form their own games companies, such as IndieSkies and Pillowdrift, for their placement year, and they have the opportunity to use premises at the Derby Uni Enterprise centre to help them get up and running.
TT [The CGP] one-year placement is crucial. For the majority of our students, it leaves them in a comfortable position to transition to graduate employment, and many of them have jobs lined up before finishing the course.

> "Many students go into business for themselves while studying – they've published their own mobile titles to help build their portfolio"



Tell us about the university's 'Next Generation Development Suite'.
TT We have two suites that are dedicated solely to the games students. These are equipped not only with the best machines we have available but also a range of dev kits including 360 and PS3. We currently have big plans for expansion that should equip our guys even further for the next-generation shift.

How has your curriculum changed to reflect the rise of, say, mobile gaming?
TT The industry has transformed dramatically this generation, and I would stress the need to craft students who can go either way – who can break from triple-A and have the confidence to build games and port them to different platforms. This brings game education more in line with a traditional computer science route, since lessons can be learned from the approaches taken in enterprise-business software. Thus far we've seen very positive results, with many students going into business for themselves while studying – as Phil says, they've set up companies and published their own mobile titles to help build their portfolio.

You're partnered with Microsoft and Epic, but how about Unity?
TT Unity has certainly became more prominent in our teaching of late – our students flooded towards it, and we took heed. We've spent many years working in XNA and UDK, but of course we accommodate more options now, too. So while we continue to teach UDK, we've moved towards Unity, Visual Studio 2012, Direct X11 and Windows 8. Also, we update the curriculum annually to keep us up to date and relevant.
PM In terms of Microsoft, their provision of software is a major benefit, but they also sponsor the Games@Derby Expo and host game jams, which provide really valuable experience for our students. ■

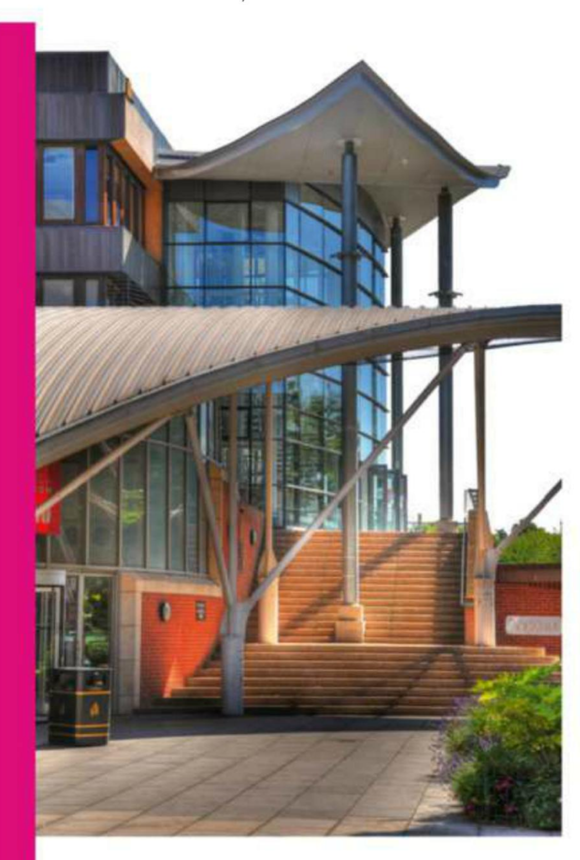


UNIVERSITY OF HULL

In-house software development studio helps to SEED student success

WARREN VIANT
Head of computer science
www.hull.ac.uk

Academics and employers are pretty much unanimous in the view that hands-on experience in a pressure-cooker studio environment is a crucial part of any training for a career in videogame development. And that's something the University of Hull has taken to the next level with the creation of SEED Software, a commercial studio staffed by students. Head of computer science **Warren Viant** explains how a suite of degrees feeds into the eight-year-old project, and highlights a few of the other benefits of studying in Hull – both within the university and outside in the city itself.



What game degrees do you offer?
At undergraduate level we have the three-year BSc Computer Science With Games Development, and four-year MEng Computer Science With Games Development. Our one-year postgraduate courses are MSc Games Programming, MSc Computer Graphics Programming and MSc Computer Science.

How do the courses differ?
Our BSc provides the core knowledge that is then expanded upon in the MEng. The MEng also provides valuable industrial experience within SEED and the additional Masters year allows graduates to build up a compelling portfolio of work. The MSc programmes provide opportunities for students to specialise in games programming, including an extra semester to allow time to develop impressive projects. MSc Computer Science is the most general and flexible postgrad course, but they all feature a common core of modules that build up the foundation of knowledge you need in any software job.

"SEED is not just about theory – it enables students to use their knowledge to solve real problems in an industrial context"

Can you explain SEED in more detail?
SEED is a commercial software development unit within our Department of Computer Science. It's one of our primary tools in teaching employability skills to undergraduates and postgraduates. MEng and MSc students get the opportunity to undertake industrial projects managed by SEED for a wide range of clients. This high-quality industrial experience is unique in the UK, and as a result of the advantages it provides, 100 per cent of the jobs for last year's MEng students were in the games or software industry.

What do students learn during their SEED experience?
The importance of SEED and the skills it teaches is hard to overstate. Students are exposed to the entire project life cycle. They meet customers, gather requirements, agree the specifications, develop the software, and finally deliver and install the product. SEED is not just about theory – it enables students to use their knowledge to solve real problems in an industrial context to develop systems and games.

Other than SEED, why study at Hull?
Over the past 16 years of games programming education, we've acquired a reputation for graduating high-quality games programmers. We have alumni in most major studios, and these studios often visit us to provide guest lectures to students and give us feedback to use in our curriculum development. Our focus on practical development skills means that our students can actually develop software, as shown by our success in game jams and development competitions. We're the most successful UK university in Microsoft's Imagine Cup, for instance.

What are the other benefits of studying at Hull?
Hull is one of the UK's lesser-known cities, which means its remarkable transformation from a fading fishing port to a vibrant city takes many people by surprise. The cost of living is reasonable and Hull has retained something of a small-town atmosphere. It has an indefinable quality that's hard to explain to those unfamiliar with the place, but that causes those who come here to fall in love with Hull. ■



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GLASGOW CALEDONIAN UNIVERSITY

Glasgow offers a range of focused courses to help graduates stand out in an increasingly competitive industry

EDDIE HORN
Course leader
www.gcu.ac.uk

For a long time, it's seemed that the University of Abertay Dundee has hogged the limelight when it comes to videogame degress. But over on the other side of Scotland, Glasgow Caledonian University offers two design and software-development-focused Computer Game BScs and two BAs – one in 3D Computer Animation and another in Art And Animation. Between them, the four courses cover a broad spectrum of game-making skills, from artistic to technical. There's also an MA in 3D Design For Virtual Environments which, while not exclusively created for game industry hopefuls, allows modellers to develop their skills for various industries. Course leader **Eddie Horn** talks us through the changing expectations of game developers.



You have some surprising industry partners, including IBM, Dell Corporation, Royal Bank Of Scotland and the Strathclyde police. Are these the kinds of companies that your videogame students can expect to find placements with?
Although our website lists some of the larger industry partners who are able make long-term commitments, we regularly have students working with smaller studios and companies on a project-by-project basis. But employers are increasingly looking for graduates with good 'employability skills'. Employers want students who have good communication and interpersonal skills, are able to use their own initiative, are organised and can plan ahead, are good at working under pressure and can work as part of a team. In our experience, large organisations are very good at providing the right environment in which to develop these skills.

How else are employers' expectations of graduates changing?
Graduates today need to be flexible and adaptable. And that's particularly important if you end up working in a smaller studio, as you might be expected to pitch in and help with a range of tasks when a deadline is fast approaching. Enthusiasm and a 'can do' attitude help, too. More and more, companies need graduates who will hit the ground running and be able to make a significant contribution from day one. We try to provide a flexible learning environment and our courses are constantly evolving. The shift to mobile and indie games still requires the same core and underpinning skills, it's just in the application of those skills that we're seeing the major changes.

Are you seeing more female applicants, or is gender inequality still a problem?
Actually, this year we've had more applications from girls than boys for the first time, which is encouraging. In general, we're definitely seeing more applications from female students for our courses, particularly for the 3D Computer Animation and the Art And Animation courses. Obviously, there are a lot more girls playing games now, and they're definitely starting to seriously consider careers in games.

"Graduates today need to be flexible and adaptable. That's particularly important if you end up working in a smaller studio"

What do you think is the biggest challenge facing today's graduates, whatever their gender?
Getting noticed. There are jobs out there for students with the right set of skills, but competition for the top jobs is intense. A good degree coupled with an excellent portfolio is crucial if you want to be able to compete.

What can the city offer those studying at Glasgow Caledonian?
Glasgow is just the right size for a city: not so big it loses its identity, but big enough to have a really vibrant music scene and some great pubs, clubs, restaurants and shops. If you're feeling adventurous, it's also a great base for exploring the rest of Scotland, with some of the most dramatic scenery in Europe right on our doorstep. Kayaking, mountaineering, skiing, biking, sailing, even surfing are all possible within a few hours of the city. ■



UNIVERSITY OF ABERTAY DUNDEE

If you're only as good as your contacts book, Abertay is very good indeed

LOUIS NATANSON
Academic director
www.abertay.ac.uk

Grand Theft Auto and *Lemmings* creator David Jones tops a list of alumni that means Abertay has plenty of history to shout about. But the university is also investing heavily in the future. Its annual development competition, Dare To Be Digital, culminates in a public event attended by over 10,000 people. And the university's Prototype Fund, which offers fledging studios a cash injection, has sparked several indie successes. Here, faculty academic director **Professor Louis Natanson** explains the courses, industry contacts and funding on offer to students.

What courses do you offer to gear up graduates for a career in games?
Our undergraduate courses are BSc Computer Games Technology, BSc Computer Game Applications Development and BA Computer Arts. Our flagship course is the 12-month Professional Masters (MProf) in Games Development, which builds on the same game studio-style learning as Dare To Be Digital. Small teams of programmers, artists and sound engineers work together to make game prototypes to a proper client brief. It's very challenging, but a safe way for students with a background in arts, general computing or games to learn from experienced industry professionals how development really works.

Dare To Be Digital is a great opportunity for your students.
It's something unique in education, and in the game industry. Each summer we bring together 15 teams of five students from around the world to build a brand new game in just nine weeks. At the end, they have to put their games on show to the public at our Dare ProtoPlay games festival. Industry experts pick three winners, who become the sole nominees for the BAFTA Ones To Watch Award. It's an incredible opportunity to meet people in the games industry during the nine weeks, not to mention the prestige of having taken part.

How closely do you work with studios and developers to build your syllabus?
We have an advisory group of game studios and industry experts – including Channel 4, Denki, Rare, Sony, Tag Games and Ubisoft Reflections – who guide all of our courses, which are constantly under review. Since launching the world's first Computer Games Technology degree with industry input in 1997, the courses have been regularly developed to match the shifts in the industry. We're also part of the PlayStation First initiative to get dev kits in the hands of students, so they can learn to code on PS3s and Vitas on our courses.

What is the Prototype Fund, and how does it work?
The Prototype Fund offers a route for graduates to springboard into a career by starting their own company, or for existing small games studios to massively reduce the risk of testing out a new game. Getting a £25,000 grant to build a prototype is an incredible boost to attracting extra investment. One of the studios we supported raised £800,000 in private funding after completing their prototype.



> "Our strong industry ties and international reputation mean that students regularly work on projects for Disney, Microsoft and Sony"

Why should students choose Abertay over other universities?
Educationally, Abertay stands out since all of our game art, audio and programming degrees are delivered from the same department – and all these students directly interact with each other. Games companies need graduates that can communicate and work with experts in different areas, and that's been a key part of our courses from the start. For instance, in their third year all students do a major project responding to a client's brief. Our strong industry ties and international reputation mean that students regularly work on projects for Disney, Microsoft and Sony, as well as a large number of Dundee- and UK-based studios. ■

ENJMIN

Preparing students for a game industry that's everywhere and on every screen

STÉPHANE NATKIN
Director, Enjmin
www.enjmin.fr

South West France's Enjmin students are passionate about everything from comic books and film-making to sound design and game art. Director **Stéphane Natkin** is keen to recruit more international learners from countries such as the UK to his two-year Masters in Games And Interactive Media to add to that mix. And there's a short course in French for those drawn to the idea of studying in picturesque Angoulême but concerned about the language barrier. Here, Natkin explains the ethos of an institution ranked the best games educator in France by industry trade union Syndicat National Du Jeu Vidéo.

How do you see the industry that students hope to join?
The world of games is changing very fast. At the last GDC everybody was talking about freemium and free-to-play, but maybe this trend is already over and triple-A is already over. I used to say that we are at the end of the story of games. Not because videogames are disappearing, but because they will be everywhere on every screen.

How does the Masters degree prepare students for a game industry in flux?
Take, for example, a student interested by sound design with a related undergraduate degree. In their first semester they learn some basics about visuals, game design and programming. In their second semester they will learn about sound in games. Then they work in a team on a project to make something interactive and engaging which needs no explanation. In the second year they get advanced courses in their specialism and take a game from pre-production to prototyping. The Masters ends with a six-month internship: 98 per cent of students go to a game studio – a third at Ubisoft – and two per cent go to a lab and then start a PhD.

"In Angoulême you can meet and work with around 800 students coming from art, animation and documentary schools"

How much do students pay?
In France, all the universities are public. If you are under 28 and you have not worked for more than two years, the fees are about €450 per year. Otherwise it costs €5,000.

Tell us about student life in Angoulême.
Angoulême is a historical place not far from Bordeaux and Cognac. It has a pleasant climate. It's not far from the sea and two-and-a-half hours from Paris by high-speed train. It is the comic-book capital of Europe due to a festival in January. There's an active cultural life with the music and film festivals. But probably the main point is that you can meet and work with around 800 students coming from art, animation and documentary schools. Next year we will have a huge new building with a lot of technology installed in an old paper mill, along the river Charente. And it's important to mention that the cost of living is low – you can find a studio for €300 a month, for example. Angoulême is a really good place to spend two years and get a Masters.



It sounds like a great place to study; what's the story about it also being a romantic one?
Ashley Zeldin and John Nesky from Thatgamecompany met each other at the 2012 LA Global Games Jam. This year they were invited to Enjmin. They stayed for the Games Jam and for the anniversary of their meeting designed a love game [see it at www.bit.ly/146Rbpq]. The background of this game is a stylised 2D map of Angoulême. ■



HOWEST UNIVERSITY COLLEGE

A Belgian institution that's earned a reputation for its extremely tough course

RIK LEENKNEGT
Academic director, DAE
www.howest.be

The Digital Arts And Entertainment (DAE) bachelor programme at Belgium's Howest University College begins its third iteration this year, having just been redesigned from the ground up with help from experts working within the game industry. The university itself has been been voted 'most entrepreneurial institution' five times in the past eight years by industry employers and the government. From next year, DAE will have its own bespoke building, dubbed The Level, which will include an incubation centre, mocap, greenkey and audio studios, as well as a knowledge and competence centre. Taught entirely in English, the bachelor programme is notoriously unforgiving and makes no concessions, but **Rik Leenknegt**, academic director for DAE, believes that this survival-of-the-fittest ethos drives those who do stay the course to work harder, and ultimately results in stronger graduates.

Do you think the difficulty of your course gives your graduates an edge?
Definitely. Many students don't seem to realise that playing games is totally different from developing games. We expect our students to attend classes for 25 hours per week, but also work at home for another 25 hours. Which obviously results in an average workload of 50 hours per week, consisting of periods with heaps of work and plenty of deadlines, alternated with calmer periods. Through this workload, we try to simulate the reality [of the game industry] in the best possible way. Only the best survive!

Your international advisory board must prove useful there.
Yeah, it would be crazy to pretend that we know everything. We need the input and expertise from studios and developers, and that was also one of the main reasons we created the board: to keep pushing us forward, to guide us and challenge us. We are convinced that education and industry should go hand in hand.

Another close relationship is the one between technical and creative prowess. Which do you think is most important for students looking to make a mark?
Again, they go hand in hand! The game industry depends on very highly technical skilled people, but if you want to stand out you have to come up with fresh, innovative ideas. Therefore, next to having a strong technical knowledge, graduates should also learn to think outside the box and adopt a holistic approach, which is a real asset on the market.

> "Next to having a strong technical knowledge, graduates should also learn to think outside the box and adopt a holistic approach"

What can students expect if they move to Belgium?
Howest is in the north of Belgium, and we have one of the highest standards of education in Europe! Howest is spread over four campuses situated in Kortrijk and Bruges, the latter of which is one of the most beautiful cities in Europe. You can walk along the maze of cobbled alleys and romantic canals and imagine yourself in medieval times – it's pretty inspirational, actually! And Belgium has a rich cultural heritage, vibrant nightlife and we're close to artistic cities like Ghent, Antwerp and Brussels, the capital city of Europe.

Who do you count among your alumni?
I can't share any names, but our graduates are currently working all over Europe – and beyond – at many companies including Electronic Arts, Crytek, Codemasters, Spicy Horse, Larian Games, Splash Damage, DICE, RockStar North, Guerrilla Games, PostPanic, Eidos, BossAlien and 2K. And this year we've started up an alumni group called the DAE Veterans. Every now and then we organise activities, to see how everybody's doing. We went karting two months ago and, of course, all alumni will be invited to the opening reception of The Level. ■




howest
University College West Flanders
Member of the Ghent University Association

NEW YORK FILM ACADEMY

Adopting a 'playcentric' approach, and preparing graduates the game industry really wants

CHRIS SWAIN
Consultant, NYFA games programmes
www.nyfa.edu

With twin courses running in New York and Los Angeles, New York Film Academy (NYFA) places its students in two of the world's major development and cultural hotspots. But it goes much further than that, inviting professional coders to work with teams of aspiring developers. NYFA's courses are brand new and guided by a strong focus on game design that champions a 'playcentric' approach. Here, course architect and veteran developer **Chris Swain**, who set up EA's Game Innovation Lab, explains NYFA's offer.





New York Film Academy's curriculum is more about creating future game designers and creative leaders than hardcore programmers

You do things a little differently at NYFA. How does it all work?
The core course is Game Studio. Students take it each semester and must work as a team to deliver a working digital game both times. This class is exciting because each semester the student is running his own studio with classmates. The student gets mentorship and instruction from faculty members who are top-tier professional game developers. We provide each studio of three or four students with a professional programmer as a teaching assistant and technical team member.

Tell us about the 'playcentric' approach that informs the courses.
This is a method developed over the past 15 years and is expressed in the book I co-authored, Game Design Workshop. Playcentric design is taught across the curriculum and involves three aspects. Firstly, the student will understand fundamental theory so they can deconstruct any game experience into formal, dramatic and dynamic systems and learn how to interrelate the three. Secondly, they learn the core development process, picking up skills of game prototyping, playtesting, iteration, presentation and collaboration. The third principle is 'practise, practise, practise'. All students will prototype multiple games hands-on, regardless of technical skills.

How do you go about preparing industry-ready graduates?
It is imperative that a graduate have solid exposure to both the technical and creative. Students should be aware that the industry is schizophrenic when it comes to entry-level hiring. By that I mean studios say they want to hire tomorrow's creative leaders but the skills most likely to land a student their first job are technical. So our curriculum provides enough hard skill technical exposure to programming, art and Agile tools so they can get in the door. And the curriculum also provides the deeper, soft skills of creative leadership and playcentric design.

> "Studios say they want to hire tomorrow's creative leaders but the skills most likely to land a student their first job are technical"

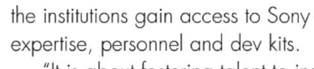
You mention creative leadership. Are you looking to create fast-track development stars?
Inside triple-A game studios the age at which a person is first able to successfully lead a big project – such as *Bioshock Infinite* – is 32 to 37. That's because it takes a long time to get exposed to all of the things you need – technical, creative and business – to be competent at the top. Students who get a complete education in games and lots of real exposure while in school – like the curriculum I described above – have an advantage from the start. A goal is for developers to be able to get to that top position earlier in their career – say in their mid to late 20s.

How do you prepare students for next-generation technology?
Our student studios will be able to make awesome play experiences that run on a platform of their choosing – including next-generation consoles such as PS4 and devices such as Google Glass. That said, those projects are probably not going to push the technical boundaries of a given platform. Doing so would require a full engineering infrastructure and curriculum and detract from our mission. ■



SONY COMPUTER ENTERTAINMENT

How one of the biggest players is offering students access to its gaming hardware



DR MARIA STUKOFF
Head of academic game development
www.bit.ly/10twa7L



PAUL HOLMAN
Vice president, SCEE R&D
www.bit.ly/10twa7L

Sony's next-generation hardware push seemed to catch key rival Microsoft on the hop, but its engagement with the next generation of developers is based on a more established strategy. The PlayStation First programme is designed to inspire innovation. It's an invitation-only club open to universities and talent incubators that meet certain academic and 'PlayStation-orientated' criteria. In return, the institutions gain access to Sony expertise, personnel and dev kits.

"It is about fostering talent to inspire the next generation of PlayStation-savvy game developers," explains **Dr Maria Stukoff**, SCEE's head of academic game development. "Uniquely with our programme, students can obtain real industry skills and hit the ground running when they join SCE Worldwide Studios and our R&D and technology groups. Beyond that, graduates who engage their entrepreneurial spirit to establish a startup company can show confidence to develop a new PlayStation IP."

PlayStation First enables students to access the SDKs used by professional game studios at a price their institutions can afford. It's an academic partnership programme that consolidates several ad-hoc hook-ups with universities – informal arrangements and pockets of collaboration between Sony staff and educators.

"We wanted to formalise these arrangements," explains **Paul Holman**, vice president of SCEE R&D. "PlayStation First gave us a better focus to tackle one of the key challenges for the future: how to channel the energies and abilities of the next generation of game developers, and give them the skills to immediately benefit studios across the world."

Holman and Stukoff have strong views on the attributes students hoping to gain a foothold in the game industry will need. "We need a mix of talented people with different skills," says Holman. "For an aspiring student, if you love to program, look at what approaches are driving the industry and focus on languages that will be trending when you graduate. If you are interested in art, audio and so on, gain familiarity in using the packages and tools that are being used to develop games."

For Stukoff success is "definitely about inspiration, motivation and being skilled up." And being skilled up, she explains, "is not only on a technical or creative side but also by understanding the industry, the players, the products as well as past failures and successes, and knowing where you want to fit in."

Stukoff acknowledges the huge skill gap between what graduates can offer and what the industry wants, identified in 2010's Livingstone-Hope report, and says PlayStation First aims to address those gaps by providing its academic partners with industry insight, vocational training and the scope to innovate and incubate top talent.

And that pool of talent will doubtless be keen to get hold of Sony's newest toys. But with a new console almost within touching distance, demand for Sony's next-generation dev kits has been so high that PlayStation First's PS4 programme won't begin until 2014. Thankfully, similarities with the PS Vita SDK – for instance, the common Razor optimisation tool – should make the transition to next-gen processes easier for students and educators.

But the bigger picture, explains Stukoff, is that PlayStation First can benefit the whole game industry, not just individual students or Sony during a console launch period. "Engaging with academia across the UK and Europe means that SCEE is actively taking part in shaping the future of game development education and offering pathways for students to get into games." ■



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